

Bird-Lore

A BI-MONTHLY MAGAZINE
DEVOTED TO THE STUDY AND PROTECTION OF BIRDS
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES

Vol. XXIV

JULY—AUGUST, 1922

No. 4

A Bird Sanctuary in a Small Residential Garden

By GEORGE S. FOSTER, M.D., Manchester, N. H.

THE writer has long felt that a well-established home with a small adjacent garden has something wanting about its environment if it does not have the things necessary to attract birds.

Song-birds certainly play an important part in the happiness of a home. Also, if children who have reached the proper age are continually playing about the garden, they will develop traits of observation if given something in nature to observe. The writer has children of this age and they are continually making inquiry about birds and plants, trees, and flowers. Such inquiries must assist the parents to be better observers and naturally to acquire the desire to help the children.

Back of our home we have a space some 55 feet square. We have bounded this area by a hedge of ibota and barberry. Within the space we have set out apple, plum, pear, and cherry trees for our own use, with the possible exception of the cherries which we contribute freely to the Robins and Cedar Waxwings. For small shrubbery we have set out rose bushes, elderberry, red cedar, mountain-ash, fir balsam, blue spruce, plain ash, bittersweet, Virginia creeper, Dutchman's pipe, white pine, red pine, and numerous other varieties of low-growing shrubs. These were planted with the idea of creating an environment proper for birds in the fall and winter that they might find enjoyment within the branches and food when they lacked other resources for nourishment. All of these have flourished and are doing well and seem to fulfil the desires of various varieties of birds.

About two years ago, after things had begun to grow well, we set about to plan out a systematic home for the birds with the idea of having them brood their young within this small area.

Our children were becoming intensely interested, and our own enthusiasm was augmented by theirs. As a result, plans were drawn and ready-made houses, baths, feeding-stations, nesting-supply station, and the like were secured.

We secured the services of a mason and carpenter and things were begun

to make birds happy. The idea was not without its drawbacks, for the numerous house-cats, the English Sparrows, the small space at hand were all hindrances. However, we made progress and, wherever possible, we placed some sort of an enticement for birds. To eliminate the house-cat my boy used his air-rifle. The same method proved effective for driving away that pest, the English Sparrow.

Houses for Wrens, Bluebirds, Chickadees, Flickers, and other birds were placed under the advice of an ornithologist of some note, in positions where they would be attractive.

The attractive little circular Wren house was placed on the south side of



GENERAL VIEW OF GARDENS IN REAR OF THE RESIDENCE

In this small plot of land are located the devices for attracting birds, as mentioned in the text; close scrutiny will reveal some of them

the residence, near the rose-arbor and Virginia creeper, and close at hand, on the lawn, was placed a bird-bath, which has proven to be a great relief to all kinds of birds.

On the south side of the house, just outside of the dining-room window, was placed a wall feeding-station which the birds frequent and enjoy very much. Just a little to the left of this feeding station, but at a higher elevation, was placed a Bluebird house. This house has been occupied this season and a fine brood of youngsters raised. This rearing of a Bluebird family, just outside of our dining-room window, has been a great source of pleasure and instruction to my children.

In the rear of the house, facing the east, is situated the garden and some fruit trees. Here, near a cherry tree, we placed a large protected feeding-station. This has been frequented by various kinds of birds both summer and winter. Because of our neighbor's house-cats it has been necessary to surround this feeding-station with a wire fence. At each corner of the feeding-station we have placed a red cedar tree.

Among the fruit trees has been put another Bluebird house of the circular type, placed on an 8-foot galvanized iron pole. This house was visited by Bluebirds last year and again this season. At the base of the pole we have planted dwarf red pine and some bittersweet vine.

Just at the south border of the garden has been placed a nesting-supply station, with very happy results for many birds. This also can be used in winter for a suet-supply station as well as a grain-feeding station.

The rear of the garden is bounded in part by a trellis which is covered with bittersweet vine. In among this vine are placed two wall suet-cone feeding-stations, two Robin shelter nest-shelves and one Wren house. In this Wren



NESTING-SUPPLY STATION AT CLOSE RANGE

A little to the center and behind can be seen the Rockaway bird-bath and Martin-house pole

house a pair of Wrens built this spring but after completing the work they deserted the nest and built in a Wren house in a birch tree across the street. Here they successfully reared a brood. These sprightly little songsters have been a source of great pleasure to us all and as I write I can hear their song of 'five notes all in one,' as Burroughs puts it.

In the far northeast corner of the garden we erected a Purple Martin house this spring. This house has fifteen apartments and is placed on a pole 30 feet long. At the base of this pole was built a Rockaway bird-bath 4 feet high and 4 feet across the top. This bath contains three basins of cement varying in depth from 2 inches to a half inch. This has been a rendezvous for many birds in which to make their toilet. The Song Sparrows seem to enjoy it most, and this just at dusk each evening. How happy they seem in their bath, well protected from cats and shaded by the fruit trees, vines, and the sumac tree which grows very near!

Just at the south of this bath we placed a swing feeding-station which serves its purpose very well. All in all, this corner of the garden, bounded by

the ibota hedge, garnished with the evergreen trees and *Styrax japonica*, seems a little bird-city all by itself.

The garage limits a portion of the eastern border, and here, covered as it is by bittersweet and trumpet vines, the birds gather to refresh themselves. On the south wall of the garage was placed a Bluebird house and a Chickadee house. The Bluebird house has been visited and these houses soften the appearance of the garage wall on this side.

A general view of the garden, hardly 50 feet square, is rather pleasing to one interested in birds. The cherry, plum, pear, and apple trees are there, not entirely for our own use, but that the birds may enjoy them as well. The vines, hedges, and flowers of the garden attract the Hummingbirds and Wrens. At the close of day the Song Sparrow and the Chipping Sparrow enjoy the rockway bath. This space is for the birds and will remain so while the writer owns it. It furnishes a pleasant, worth-while recreation.

Regarding the Martin house, it pleases one interested in birds to know that in this, the first season it has been out, four Martins have quite regularly made visits. They come early in the morning and remain during the forenoon. The Bluebirds persist in fighting them away but in time, possibly next year, we hope that the Martins will return, conquer, and survive. How pleasing it would be to establish a Martin colony in a city from which they have been absent for several years!

Here is one little interesting incident in closing. Early this spring, in May, a pair of the Bluebirds were seeking to nest in one of the houses. A male English Sparrow took command of the house and the quarrel began. Such a noise and confusion! The Bluebirds called in cooperative forces and while the argument was at its height, seated on a wire running from the residence across the garden to the garage were seen the following birds: a pair of Bluebirds, a pair of Wrens, a Hummingbird, a pair of Purple Finches, a pair of Yellow Warblers, and a pair of Chipping and of Song Sparrows. They were all arrayed in a straight line and with the seeming intent of driving the English Sparrow away. It goes without stating that the English Sparrow lost out and the Bluebirds built and reared their brood. Many are the birds seen in this little garden daily. The Catbird, Blue Jay, Grackle, Flicker, Waxwing, as well as those enumerated as gathering on the wire, are seen at almost any time.

This account is given merely to encourage others to establish these little sanctuaries. We cannot do too much for our bird friends, and the recreation gained by this hobby is a beneficial one. May others take this work up and thus properly mold a fitting environment so that our feathered friends may enjoy coming to the city.

Little Stories from Birdcraft Sanctuary

By MABEL OSGOOD WRIGHT

I. A HUMMINGBIRD WAIF

OUR 10-acre Sanctuary, with its enclosing wire fence, was primarily intended as an isle of safety for birds on their travels as well as birds at home, but almost as soon as it became even locally known came the constant inquiry—"Have you a bird hospital? Do you care for maimed birds or nestlings that have lost their parents or otherwise come to grief?"

At first the suggestion seemed so good that we entertained it with enthusiasm; later on it appeared that the idea could be overworked to the verge of folly. Children, eager to help and at the same time gain recognition, would capture young birds, often in their first, ill-steered flight, that if left alone would have been perfectly well able to care for themselves, aided by overhead parental advice, etc.

In due course this misapplied aid was better directed, so that the birds brought in for care were those fatally injured or those with perhaps a sprained wing, or some minor trouble that a few days' peace, in a protected place, where food and water could be had easily, would allow Nature to make her own cure.

Among the larger birds that came in this way was a Wood Duck, two Great Blue Herons, a Woodcock, Bittern, and Loon. The first Heron was found one bitter cold January day in a half-starved condition, the tip of its bill being injured so badly that it could not obtain food in the normal way. It was placed in a large box-cage in a light, dry cellar, and fed with small fish, but though it swallowed them eagerly, it could not digest them and died after a few days. The Woodcock and Wood Duck had wing troubles, but recovered and went their way. The second Heron, Bittern and Loon each had fractures of one of the wing-bones; a two weeks' rest allowed the knitting of the parts and they flew away, the Loon living in the interval contentedly on the pond.

Two birds thus harbored gave us in return for the hospitality some intimate glimpses of themselves that might be called examples of bird friendship, without elaborating facts, and during the weeks that they were with us, wrote their own biographies in the records we are keeping—"The Stories of Birdcraft Sanctuary." The first of these was a scrap of a Hummingbird, brought to Birdcraft early in July, staying with us twenty-two days.

At the first glance it seemed more like a black bug than a bird, as it lay in the warden's palm, motionless, with no expression in its beady eyes. It had been picked up on the porch of the finder, who had brought it half a dozen miles in the hope that some means could be devised of rearing it.

No anxious parent was in sight, there was no visible nest from which it could have fallen, or any other clue, and it seemed almost impossible that so frail a thing could have been dropped on the hard boards, in any way, and still be alive.

A scant crop of rough black down was its only cloak, its neck was not strong enough to hold its head up or keep the needle-like bill from doubling under its body.

The warden made a nest-like bed of cotton in a small box, then sprinkled a few drops of sugar and water on his finger, which the bird ate greedily, following the shaky drops about with its tongue. At best it must have been several hours without food at a time when such young nestlings of any species require constant feeding in the daylight hours. In a surprisingly short time it revived and fed eagerly. At this period food was given every half hour, always by sprinkling it upon the fingers.

Soon the warden began to vary the food, using diluted honey. This diet and method of feeding were continued for ten days. By this time the bird was able to perch on the edge of the box, extend its wings and try to preen itself. The warden then changed the feeding method and sought to stimulate the bird's actions and natural habits by dropping the food into petunias, or other deep-throated flowers, and letting the Hummer siphon the nectar in the usual manner.

Then came strenuous days for the warden's entire family, for the bird demanded food every fifteen minutes, and if it was not forthcoming would squeak and dash about until it was supplied, the children taking their turn as foster parents, until each one realized the labor required of the little parents to keep even the normal Hummingbird family of two supplied.

It was at about the twelfth day of its visit that the bird took its first bath in a tablespoon, first alighting on the edge and then splashing vigorously. After this it flew about at its own pleasure, having a finely developed sense of direction that kept it from colliding with the many objects of a family kitchen and living-room combined, and at no time was it confined. After feeding, it would perch, sometimes on a picture, the clothes-rack, or on the top of the clock, and more than once it stopped to rest upon the head of the warden's wife when she was ironing and moving about, more or less, sometimes becoming tangled in her hair. Its favorite night roost was the edge of an electric lamp shade.

Up to this time the bird had been an object of keen interest and study, but for the remaining ten days of its stay it became a serious responsibility. A constant watch had to be kept at the opening and closing of the screen doors, lest it should make a sudden dash and be caught and crushed, for to keep a bird of this species in any sort of available cage was unthinkable. In spite of constant feeding and the liberty of the house, the Hummingbird was fast growing restless and the desire for liberty was uppermost.

On the twenty-second day, after much deliberation and some misgivings, it was decided that the time had come when the waif must be released, for its own sake as well as our own. What would it do on thus suddenly being thrown upon the world? Would it be lonely and bewildered, presently seeking to

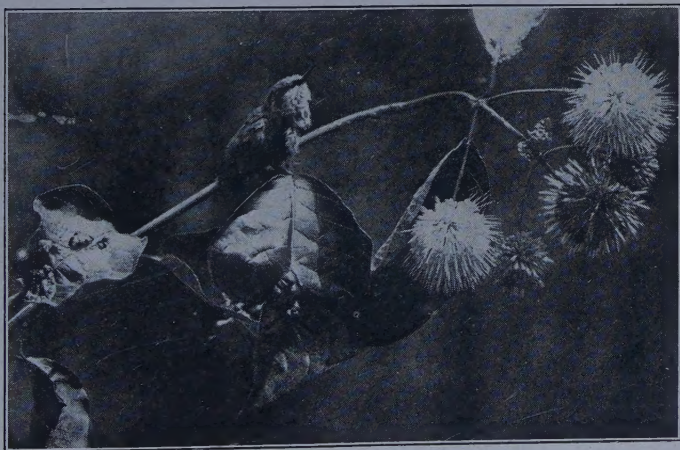
return to house shelter, like some of the Robins and Catbirds that I had rescued and housed in pre-sanctuary days? Would it quickly exhaust itself by too rash and constant flight?

It was a little past noon of a half hazy August day when the warden brought the bird to my garden. The phloxes were ablaze with bloom and their delicate fragrance was made more evident by the heavy air. Pausing before a stalk of very large white flowers, the warden opened his partly closed hand, releasing the bird which had remained there without a struggle, so complete was its confidence.

My camera was placed to the best advantage for taking a snap of the bird against the white flowers. The moment came! It paused a moment upon a finger of the now open hand, and then circled the white spray with the true spinning-wheel hum of a veteran. My fingers tightened upon the bulb of the camera, the shutter being set at full speed, when lo, and behold! from above came a flash of iridescence and a second Hummingbird circled about the phlox! The waif gave two sharp calls, the other bird responded, and before I could press the bulb the two had darted away in evident joyous companionship!

Was it only a chance meeting? Or was it a feathered scout of the tribe sent by Mother Nature to seek and reclaim the lost?

One thing only is certain, the house-reared Hummingbird did not return to us, but entered into its own kingdom—our best reward. At Birdcraft we do not seek to humanize birds, or to tame them artificially; we try to look at their lives from their own angle, not ours. We strive to aid them and then speed them on to the life for which they were made.



AN ORPHAN HUMMER

In the Nesting-Season

By KATHARINE UPHAM HUNTER, West Claremont, N. H.

IT WAS June; the voices of a thousand birds proclaimed it in the old pasture, in the encroaching forest, in the broad adjacent fields, and in the ancient apple orchard. Never had bird music been richer, more charged with the promise of renewed life and hope. When I awoke, the pleasant voices of my dreams had melted into the liquid, joyous notes of Purple Finches, poured from the elms drooping over the stone house, and quickly I arose to seek the little singers, silhouetted against the mist-encircled mountain and the shining river at its foot. Why, just at that moment, when earth, sky, bird music, and the miracle of recurring dawn wrought their spell upon the listener, should the Brown Thrashers and the Catbirds in the hedge begin their vocal grotesques?

Then from the pasture came the plaintive, eerie wails of the Upland Plover, and the minor lay of the Vesper and Field Sparrows, their notes seemingly much more cheerful now than when, sometimes at night, their sad singing quavers in the dark. In the field, over the hum of many tiny voices, rose the clear, sweet whistles of the Meadowlark; with a flash of gold, black, and brown plumage and pennant white tail-feathers the bird would mount overhead, his rich jumble of song lasting till he reached the top of an elm. Over in the orchard the amorous Flicker sent forth his clarion notes, and the Woodpeckers voiced their emotions in a dull, steady drumming. There, too, the jubilant Orioles and the tender Bluebirds warbled and arranged their differing nests. On the edge of the woods the Scarlet Tanagers and the Vireos chirruped, the Ovenbird shrilled, and the busy little Warblers darted and sang their tiny praise.

Yet all this joyous prelude of bird music and beauty of plumage was not to delight our eyes and ears. The real meaning was hidden away in the grass, the trees, and the bushes. If a mortal found the secret, happy the mortal. If not, happier still the birds, and in either case, perhaps, small difference in the scheme of Eternal Nature.

But I am a gossip, of a kind, and I needs must go out and see what my bird neighbors were doing. The first that I saw was a Bluebird; she was flying toward a knot of an old apple tree in the orchard, and she had something in her beak; squeakings tell the secret, and a peep into the knot-hole reveals a feathery family of five young Bluebirds. Their baby clothes were grey, tinged with blue. They lisped and stretched their necks, with friendly eyes, and yellow, gaping throats, but when my face greeted them instead of their mother's, they silently withdrew and flattened themselves against the wood of the tree-hole.

The next discovery was a Meadowlark's nest in the field above the house. Five large white eggs, plentifully speckled with dark spots, lay in a grass nest

with an arch of grasses completely hiding the eggs. In the fork of a young white pine on the edge of the field, I found a Chipping Sparrow's cradle; it was made of dry grass and rootlets and lined with horse-hair. Five small pastel-blue eggs with purplish brown markings at the larger end, foretold more Chippies. But I hurried away, lest even my presence should cause the parent birds to desert the nest. Some Chipping Sparrows are over-sensitive.

Not far from the little white pine grew a tiny hardhack bush, and from beneath it, as I approached, flew a small brown bird whose white outer tail-feathers proclaimed it a Vesper Sparrow. The nest of dry grass, loose yet firm, and lined with soft horse-hair, rested in a slight hollow scooped in the earth. Five white eggs, speckled with brown, lay in it.

And so I spent the happy hours, wandering from upland field to wooded valley, and from valley to the river meadows. Everywhere life was at the high tide. And the magic of it all came when the sun sank behind the violet mountain; then in the dusky aisles of pine in the cathedral woods rose the holy evening hymn of the Hermit Thrushes and from the timbered terraces far below by the river rang the rich, mysterious song-cycle of the Veery—*wheel, wheel-wheel, ah wheel!*—running, crystal water, bush ferns, moss, mystery and wonder, shot with pain, compressed in the song of one dup bird.

But verily "in the midst of life we are in death," for Nature is ruthless, and the smiling landscape hides many a bitter tragedy. The struggle for survival brands everything living, and from the frail birds is wrested every year a heavy toll. Only yesterday, in a mood of high ecstasy, I found two Hermit Thrushes' nests. The first nest was in the pasture, cunningly contrived on the ground at the base of a small white pine seedling; it was fitted to the earth and built of pine needles with an edging of soft green moss at the brim; it contained four eggs. The nesting bird slipped away noiselessly over the ground and then flew up as I approached, but this high priestess of the woods had revealed her true shrine and very reverently I knelt before it. The second nest was on the edge of a hemlock fringe of woods, and I saw the downless new birds in its piney cup. Today the nest was empty, and the helpless blind babies gone. From a pit I passed this afternoon some ugly skunks leered out at me. Were the heavenly voiced babies squab for skunks?

The walk had revealed one more tragedy. Two days ago, below the stable, in an unprotected spot, I had found—a Veery's nest! From the center of a low meadowsweet bush two great eyes watched me unflinchingly and let me approach by cautious degrees till I bent over the bush. Then out quietly flew a female Veery—quietly, unexcitedly she flew to a nearby basswood and shook her feathers, leaving me to examine her nursery—the nursery of the most magic-voiced of all our birds whose strange singing weaves a spell as deep as any ever cast by witches' incantation. Plaited of roots and grasses, with one crow's feather for luck, was the sprite's nest, and within it three clumsy, naked birds. Today but one blind thing remained. Now, when with the sunset rose

the mysterious, haunting notes of the Veery, I knew that the Hebrew mother wept again for her slain innocents. "In Ramah was there a voice heard, lamentation and weeping and great mourning, Rachel weeping for her children, and would not be comforted, because they are not."

As the gathering darkness stilled the voices of the Hermit and Veery, I heard an Upland Plover trail his weird and long-drawn whistle across the sky, and then there was silence, save for the plaintive call of a distant Whippoorwill and the occasional hooting of an Owl from the deep woods along the river.





1. FEEDING



2. BROODING



3. ON GUARD

THREE VIEWS OF THE YELLOW WARBLER
By Albert D. McGrew, Pittsburgh, Pa.

My Neighbors, the Nighthawks

By S. R. MILLS

With Photographs by the Author

DURING the month of June, 1919, I was especially interested in a pair of Nighthawks which frequented the neighborhood of my home (Kingston, Ontario, Canada). From the garden I could watch these birds on their incessant sky-hunt for insects, each selecting its section of the upper air apart from the other. There was a peculiar fascination in watching one of them climb so high in little ascending jerks, then to see him 'side-slip' and come tearing down in a 'nose-dive' until on a level with the housetops, where he would 'straighten out' with a *bongk!* and whirr upwards to begin again his fitful, irregular climb towards the heavens.

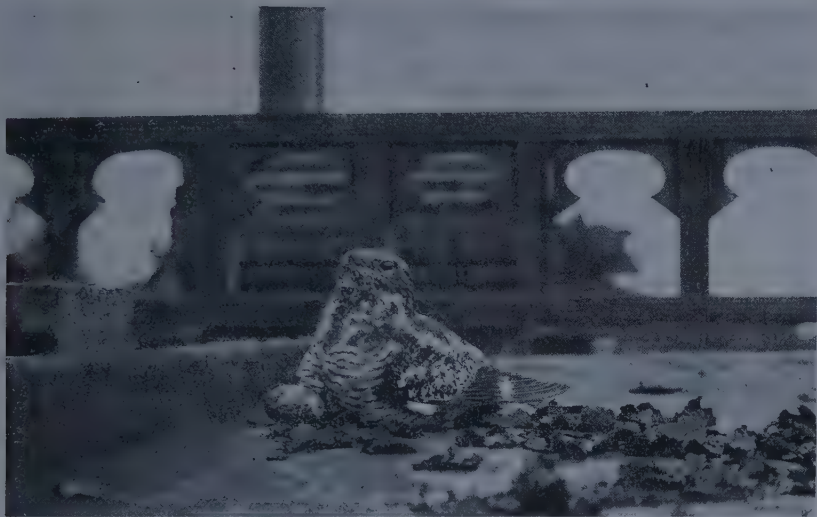


A ROOF-NESTING NIGHTHAWK

One bright morning, while watching this continued aerial performance, I saw one of the Nighthawks alight on the neighboring housetop, about a hundred feet from me, and I was greatly impressed with the contrast in appearance while on the wing, and squatting on the roof railing. In the air he is most graceful, but out of it he is awkward and ungainly. He had been in repose but a short time when by chance a Bronzed Grackle alighted on the railing a few feet from him. The Grackle was plainly startled on finding a living eye in that mottled mass of feathers, but after a little hesitation he grew bold and, strutting up to him, stared him in the eye in a most impolite manner. The

challenge passed seemingly without notice on the part of the Nighthawk and the Grackle soon flew off. This little scene impressed me with the Nighthawk's equable temperament and peaceable nature.

'Bird Neighbors' states, "The Nighthawk's misleading name could not imply more than the bird is not: it is not nocturnal in its habits, neither is it a hawk." Probably no person familiar with the habits of this bird would seriously disagree with the foregoing statement, but it goes on to say, "—except



"FOUND THE FEMALE SITTING ON THE EGGS"

when the moon is full they are not known to go hunting after sunset." The latter statement will no longer hold good for on June 1, when the new moon set about 10.30 in the evening, I heard these birds hunting continually until dawn.

On June 20, when I was beginning to think these birds very considerate of me, in that they seemed always to dive in the direction of the garden, I by chance saw one of them rise from our house and go into the sky quite close to its mate. The two had hunted together but a moment when the one which had been in the air for some time dropped quietly to the roof. I immediately went inside and ascended the ladder which led to the well-hole in the roof, making as little noise as possible. When I pushed up the cover I heard the Nighthawk fly to the next house where she regarded me with some uncertainty. I saw the eggs, as expected, and climbed out on the roof to look for the other bird. He was very high in the sky, but I had scarcely discerned him when he dropped in a swoop that brought him within a yard of my head. Then both flew round and round, not daring to alight, making me feel somewhat of an intruder. I, therefore, admired their odd coloring and perfect movements for only a moment before I dropped back into the well and left them undisturbed.

By the time I had returned to the garden one of the birds had already gone back to the hunt.

The following day I again went up, this time bringing my camera, and lifting the well-cover quietly, found the female sitting on the eggs only 3 feet from me. She remained perfectly motionless and after the first glimpse I did not again meet her gaze until I had walked to the opposite side of the roof. I then attempted to approach her, this time looking directly at her, but at my first step she flew reluctantly to the next house. This time the male did not concern himself with my intrusion, although he must have seen me, easily, from his lofty position. Fearing to keep the bird from her eggs too long, I stayed but a few minutes and did not attempt to take any photographs. On my third visit, however, I was less cautious, and on approaching the bird she would spread her wings and make a sound like a spitting cat. Since she gave no indication this time that she would desert her eggs, I set up my camera and measured off 22 inches from her beak to the lens. I obtained two very sharp pictures by using a 3-second bulb exposure and a small stop. Later, I tried to take some snaps of her with wings spread in defence of her eggs, but these were not sharp owing to cloudy weather which made it necessary to use a large stop.

As the hatching of the eggs requires but sixteen days, my discovery must have been soon after they were laid, for the young birds appeared some two weeks later. I had been going up every day in order to mark the date of their hatching, when my usual visits were prevented by a severe rainstorm which lasted three days. The storm being over, I once more called upon my bird friends, and found the female watching forlornly over a single young one, which, on investigation, proved to be quite dead. I could find no trace of the other young one, but it is my theory that it died first and that the parents, noting it to be lifeless in contrast to the one still living, disposed of it, the remaining young one even after death still attracting the female's mothering instinct. Of course, this storm came at the most inopportune time, but it does seem a pity that these peaceful birds do not build a nest, or at least lay their eggs in some place less exposed to the elements.

The black chips on the roof, shown in the picture, probably made the roof especially attractive to the Nighthawks. No other roof in the vicinity has this feature.



TWO SCENES IN THE HOME-LIFE OF A YELLOW-BILLED CUCKOO
Photographed by Joseph Pollak

The Migration of North American Birds

SECOND SERIES

XIX. BOAT-TAILED GRACKLES

Compiled by Harry C. Oberholser, Chiefly from Data in the Biological Survey

Of the five or six geographic races of the Boat-tailed Grackle (*Megaquiscalus major*) only two occur in the United States. Neither are strictly migratory, but they wander more or less during the winter season, influenced doubtless largely by the food-supply.

The **Boat-tailed Grackle** (*Megaquiscalus major major*) is resident and breeds in the south Atlantic and Gulf States, north to southeastern Virginia, west to southeastern Texas, and south to southern Florida.

The **Great-tailed Grackle** (*Megaquiscalus major macrourus*) is resident and breeds chiefly in eastern and southern Mexico and in Central America, but also north to central Texas and southeast to Colombia.

Notes on the Plumage of North American Birds

SIXTY-FOURTH PAPER

By FRANK M. CHAPMAN

(See Frontispiece)

The **Boat-tailed Grackle** (*Megaquiscalus macrourus*). The difference between the sexes is more pronounced in the Boat-tailed than in the Purple Grackle, the female of the former being a generally brownish bird with small trace of the glossy plumage of her mate. Furthermore, she has a much shorter tail. Young birds of both sexes resemble their mother. The post-juvenal molt is complete. The female acquires a plumage essentially like that of the adult, but that of the male is much duller than that of the mature bird. There is no spring molt and the shining fully adult plumage is not donned until the first post-nuptial, that is, second fall molt, after which there is no further change in color.

The more northern of our two races of this species, the true Boat-tailed Grackle (*Megaquiscalus major major*), differs from the more southern race (*M. m. macrourus*) in being smaller with a shorter tail (particularly in the male); in the male the violet of the crown does not, as a rule, extend behind the nape, instead of spreading over the foreback, and the female averages paler.

Notes from Field and Study

Birds Across the Continent

For fifteen years I had been a student of ornithology in Ohio. My spare time, and sometimes not so spare, had been delightfully spent unraveling the complexity of bird-life, delving through all the volumes of the science, until I knew most of the birds by sight and a great many by note.

I had studied birds from Michigan to Florida, but nowhere did bird-life seem so varied and appealing as in Ohio. We were located about midway between the Arctic and the Tropical faunal zones, giving us the benefit of seeing twice a year most of the myriad inland migratory hosts, in addition to our resident species.

Notwithstanding the fascination I had for Ohio birds, the call of the West had long been whispering of the many beautiful birds of the setting sun, and I longed to see and know them. While it was a trial to leave these most intimate friends behind, the longing to know new ones in a new land was the more alluring.

It was my desire to see the change in bird-life across the continent, and there is no better way to see this than by motor.

We left Ohio July 7, and arrived in California August 12. This was the time of year for most of the birds to be rearing their young, which gave us a fairly adequate idea of which birds were residents of the locality in which they were seen. Surprises await the student on a journey like this, where the landscape and environment are constantly changing. My dream was of many new species all along the road. To my surprise I saw no new ones until reaching Lyons, half way across the state of Kansas, when we saw the Arkansas Kingbird. Most of the bird books spoke of the Dickcissel being seen as far west as Illinois, while we saw it as far as Trinidad, Colo., and it was plentiful most of the way. A great many Ohio birds were with us as far as Missouri, then we began missing them—the Downy and Red-bellied Wood-

pecker, Cardinal, Catbird, etc.—and I began to realize that maybe I was leaving forever a great many of my feathered friends. The Red-headed Woodpecker, Flicker, Kingbird, Phoebe, Meadowlark, Baltimore Oriole, Goldfinch, Towhee, Logger-headed Shrike, Brown Thrasher, Chickadee, Robin, and Bluebird were with us more or less, all the way to Kansas and Colorado, several species overlapping the western forms. We saw the Kingbird long after seeing the Arkansas Kingbird, and the Eastern Meadowlark after seeing the Western. We saw the Brown Thrasher frequently as far as northern New Mexico. The Kingfisher, Killdeer and, Mourning Dove were the only three species which remained unchanged to the Pacific coast.

As stated above, the Arkansas Kingbird was the first new species seen, then followed new ones in rapid succession. The Yellow-headed Blackbird was the next seen beyond Lyons, Kan., although we should have seen it sooner. No drawing I have ever seen has given this bird its natural beauty. The gorgeous golden orange of the head and neck in contrast with the glossy black of the body, makes it one of the most attractive birds I have ever seen. We saw it no place but central Kansas. The Desert Horned Lark, Magpie, Lark Bunting, Mountain Bluebird, and the Burrowing Owl we saw in Colorado. In New Mexico we saw the Road Runner, Black-chinned Sparrow and the House Finch. In Arizona we saw the White-headed, Northern Pileated, and Lewis' Woodpeckers, Blue-fronted Jay, Audubon's and Black-throated Gray Warblers, Slender-billed, Red-breasted and Pigmy Nuthatches, Plain Titmouse, and Western Robin.

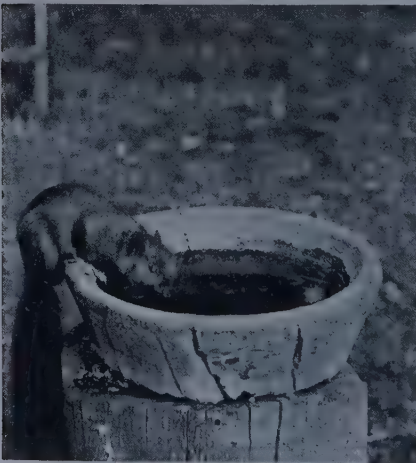
Crossing the desert we saw very few birds. Occasionally we would see the Desert Horned Lark and a few Scaled Quail. After passing through the Cajon Pass, over the San Bernardino Mountains, into Southern California, we came to more vegetation and more water and naturally saw more birds. We

had traveled hundreds of miles without seeing scarcely a living thing, then abruptly entered a land of palms, flowers, and oranges with its complement of numerous habitations of men, animals, and birds.

On first coming to California I was disappointed in the number of birds seen. The number of species of land-birds was far less than in Ohio during summer and fall, because of the scarcity of water. As late fall and winter time came on, winter visitors appeared in larger numbers and now we have more than in Ohio during winter.—H. N. HENDERSON, *Whittier, Calif.*

Are Squirrels Bird-Enemies?

As I watched the birds drinking and bathing at the bird-bath the other day, a squirrel played in kittenish fashion with the knotted end of a rope that hung from the



THE RED SQUIRREL TAKES A DRINK AT
THE BIRD-BATH

Craig S. Thoms, Vermillion, S. D.

limb of a tree to the ground. In a few moments he dropped the rope and zigzagged intermittently, and with many prankish poses, over to the bird-bath, where he is seen in the illustration. The birds had hopped to the ground or taken a winged jump to the nearby fence as he appeared, but without any signs of fear. Not an alarm-note was uttered.

Is this frisking little fellow the bird-

enemy some think him to be? "The more squirrels the fewer birds," is a common remark.

I tried to recall, one by one, the depredations of squirrels that I positively knew about during the twenty years that I had been a lover of birds, and their fewness surprised me. A few times I had seen Robins driving a squirrel out of the tree which held their nest, which seemed to be evidence against the intruder. Only last summer, before my very eyes, a red squirrel stole down the opposite side of a tree and pounced upon a Mourning Dove as she sat upon her nest. She fluttered vigorously and got away, but the rascal ate her eggs. A friend of mine was sitting under a tree in his yard when some very young, featherless birds fell to the ground at his side. Upon investigation a red squirrel was found in the tree-top throwing young Orioles out of their nest.

But these instances exhaust my list in an experience of twenty years in a town where red squirrels, which are thought to be the most mischievous of all squirrels, and birds have been associated in about ideal proportions.

Doubtless the word 'roguish' best characterizes the squirrel. In the instances given, the squirrel did not eat the young Orioles. He is not much given to flesh-eating; throwing them out of their nest was doubtless only a playful prank. The squirrel did not want the Mourning Dove that he caught. He does not eat Doves, although eating the eggs cannot be excused. And when the Robins drove the squirrel out of their tree, he allowed himself to be driven without protest. He seemed just to have happened into the tree without evil intent.

Since this is all the evidence against the squirrel that I can recall out of twenty years of rather close observation of bird-life, I cannot class the squirrel as a bird-enemy, and could not do so if my evidence were multiplied tenfold, for birds have a way of recouping their losses.

I have known a Robin, for example, when molested by English Sparrows, to build three nests in about as many weeks. The last one succeeded, and she reared as many young Robins as though success had attended her

first nest. Mourning Doves rear several broods, some as late as September. It is the habit of most birds, when one nest is destroyed, straightway to build another. It would therefore seem to be true that the few depredations perpetrated by squirrels, and done doubtless more through sheer prankishness than from evil intent, do not lessen in any appreciable degree the number of birds.

It must be recognized, however, that wild creatures, while usually liking company, also like room. Squirrels may become so numerous in a town as to drive many birds away, just as English Sparrows or Grackles may become so numerous as to crowd other birds out; but a 'sprinkling' of squirrels in a well-shaded town does not decrease either the number or kinds of birds.—CRAIG S. THOMS, *Vermillion, S. Dak.*

An Unexpected Bird-Concentration

On July 17, 1921, four of us, bird-cruising on Mount Monadnock, N. H., were ascending the mountain along the fire-line, running between the 'Red Cross' trail and the 'Pasture' Trail, when a few yards ahead, in large red spruces, we saw a number of small birds feeding on the ground where a patch of strong sunlight filtered through the trees. At this spot the forest floor was thickly sprinkled with freshly fallen spruce-cones from a tree which, in comparison with its immediate neighbors, was shedding its cones somewhat early. Just previous to this we had seen a small flock of birds fly into the trees some distance ahead and had heard their calls which we had remarked sounded like the notes of the American Crossbill.

At first glance the birds on the ground appeared to be all adult male Goldfinches, but with them were at least one adult male Purple Finch and three or four adult female or immature White-winged Crossbills, and the latter could be seen extracting seeds from the fallen cones. In addition, Mrs. Whittle, equipped with more powerful glasses than mine, identified two adult male American Crossbills with the other birds and could even see their crossed mandibles. Several Juncos, all females or immature birds, com-

pleted the list, and they, in common with the Purple Finch and the Goldfinches were picking up the spruce seeds which had become freed from the cones.

Further up the fire-line we ran across other places where freshly fallen cones abounded and here were Chipping Sparrows and more Juncos, and in one place six Purple Finches were feeding on the ground. The Purple Finches appeared to constitute an entire family, an adult male and female and four in juvenal plumage. As we later descended the mountain we encountered still more of these birds so that they were distinctly common among the spruces at this time.

Of the six species of birds mentioned above, the Goldfinches and Chipping Sparrows are not commonly found in this environment. The former are rarely and the latter are almost never met with in thick spruce woods, at least that is my experience, yet here, on July 17, we found these species and four other species in very unexpected numbers.

In regard to the Purple Finches, I have often wondered what becomes of these birds which nest so abundantly about the farms surrounding Monadnock, for they become exceedingly scarce for a season as soon as nesting cares are over and the young are able to feed themselves, that is, in July, and the explanation may be that it is a common practice for the parents to lead their young from the comparatively open farm land to the forest where the seeds of the spruce are usually obtainable and thus introduce them to the vegetable food that will soon form so important a part of the diet of northern wintering birds. The Chippies probably flocked with the Purple Finches and followed them to the mountain.

Crossbills of both species are celebrated for their erratic wanderings and eccentric nesting habits, both as to season of nesting and as to locality. While both species generally nest well to the north of Monadnock, the Red Crossbill sometimes nests considerably south of the mountain, but inconstantly as far as any given locality is concerned William Brewster has described a case of this species nesting in Marblehead, Mas (See *The Auk*, Vol. XXXV, p. 225.)

There is, accordingly, a possibility that this species may nest on Monadnock. The White-winged Crossbill, however, is seldom reported so far south at this season of the year and there seems little probability that this species nested in the vicinity or on the peak, although on account of the altitude of the mountain (3,166 feet), a surprise of this kind might occur, the upper reaches of the

A Window-Sill Aviary

A free lunch-counter for birds was opened August 1, in my west window. The first patron was a Chipping Sparrow who liked fresh doughnuts crumbed very fine, served in a glass saucer. Chippy gobbled them all up, then flew away to tell all of his friends and relatives about it. Very soon I had all I



PURPLE FINCHES CHIPPING SPARROWS, AND JUNCOS, WHO ENJOYED HEMP SEED
AND DOUGHNUT CRUMBS ON THIS WINDOW-SILL

Sometimes twenty were there at one time. They drank water, sweetened and plain,
and also liked sand-gravel

mountain possessing nesting conditions, as regards temperature and the presence of spruce woods, distinctly similar to the Canadian Life Zone. An example of another member of the Canadian avifauna pretty certainly nesting here is found in the occurrence of a pair of Bay-breasted Warblers summering more than 1,500 feet below the summit in 1921.—CHARLES L. WHITTLE, Cambridge, Mass.

could do to keep them supplied. Little Mother Chippies came who were feeding their second broods and they stuffed their bills full and carried away breakfasts and lunches to their nestling babies.

Hummingbirds arrived. They wanted 'soft' drinks. Sugar and water 'straight' was most popular. They drank and perched and drank again and did not even wait to be served, but, sticking their long tongues out,

drank out of the bottles, fighting for first turn.

By and by a Purple Finch flew in. He would like some hemp seed, if you please. "No! Nothing else would do." He preferred



FROM AUGUST 1 TO 20, HUMMINGBIRDS CAME ALL DAY LONG TO THIS THIRD-FLOOR WINDOW IN A SUMMER HOTEL IN MAINE

Pill-bottles covered with turkey-red and filled with sugar and water enticed them 15 minutes after they were put out

it cracked, but as that was only to be found on the hostess' hand, a very small quantity was consumed.

The Junco came along now, very shy and self-conscious. He would not say what he liked but sampled a little hemp seed and then a little doughnut crumbs, found them both good, and said he would come again. Success was now assured, five dozen doughnuts and over six pounds of hemp seed being eaten before the place closed on September 20.—ELEONORA S. MORGAN, *Northeast Harbor, Maine.*

Egrets on Long Island

In 1921, there were at least six American Egrets summering in the marshlands of the Nissequogue River and of Stony Brook Harbor, and on the sand-flats of Smithtown Bay on Long Island Sound. On or about July 26, I saw one bird, and up to September

7, had seen one or a pair several times; but on that day I came upon six of them feeding all near together on the river flats. A friend of mine tells me he has been as close to them as 50 feet.

The birds were around most of the summer. Farmers by the shore speak of seeing them, and I am led to believe they could be seen near the marshes almost any day. On September 10, while automobiling along the river, I saw four Egrets, breast-high in the water, not more than 75 yards away.

Exactly five years ago, Egrets (one or two individuals) were observed in this vicinity—to wit, about the inland tidal marshes of Setauket and Stony Brook. I remember seeing one bird myself in company with a Great Blue Heron; and I recall several successful pilgrimages made by people to the marshes, though I find neither in *The Auk* nor in *BIRD-LORE* mention of the 1916 occurrence.

Phenomenal last year was the presence of so many Egrets. Eaton, in Volume I of his 'Birds of New York,' published in 1909, gives 26 records, from 1856 to 1890, of the Egret in New York State. A note by Mr. John Treadwell Nichols in *The Auk* for July, 1914, records a bird seen by him at Mastic, L. I., in August, 1913—a year of another marked Egret flight. Research, however, has not brought to my eyes any published records since then, though—and this is important—talk with life-long residents of this community suffices to show that Egrets occur here *not* extremely rarely, but *merely unusually*.—JAMES W. LANE, JR., *St. James, L.I.*

An American Egret in Eastern Massachusetts

In the latter part of August, 1920, I observed an American Egret in a small pond in Newbury, Mass. I was within 100 feet of it, and there was no doubt as to its identification. Its body was entirely white, slightly smaller than that of the Great Blue Heron, its legs black, and its bill yellow. I had observed Great Blue Herons and Bitterns in the same pond many times. The Egret rarely moved as it stood in the water. It remained around the pond about ten days.—HENRY CURTIS AHL, *Newbury, Mass.*

A Bird in the Hand

Is a bird in the bush worth two in the hand? Before I answer this question let me tell you of my experience with the Least Sandpiper.

This little bird, about as big in the body as an English Sparrow, is much like the Spotted Sandpiper in general outline and actions, minus the tipping, at least so it appeared to an average business man bird-lover. They are to be found nesting along the St. Lawrence River below Montreal and in

with young just hatched is beyond describing, and the photograph must tell the story.

The mother (I suspect) was the braver of the pair. When I placed the downy young in my palm she fearlessly came to them. The touch of one parent's breast on my middle finger with the other old bird beside her was so thrilling that I shall not spoil the experience by attempting to describe it. Now I am ready to answer my opening question. In this case, at least, I must claim that a bird



BIRDS IN THE HAND

the Gulf of St. Lawrence. The accompanying photograph was made on the Magdalen Island, June 20, 1921, when I had gone as a representative of the Province of Quebec Society for Protection of Birds, in company with Mr. Herbert K. Job.

We were with the Least Sandpiper during the nesting season and found them sweet, confiding little birds, soon learning to trust us near them and even brooding as we stood right over their nest, a grass-lined hollow in the swamp.

The courting actions of these little birds are interesting. They dance on the ground, face each other, jump into the air, strut about for hours at a time. The action of the parents

in the hand is worth two or two hundred times two in the bush.—WALLACE H. ROBB, (P. Q. S. P. B.) *Portland, Maine.*

A Chimney Swift Invasion

About May 20, 1922, the New York papers published extended accounts of the entrance of Chimney 'Swallows' into the home of Mr. Rice of Kingston, N. Y. Their accounts seemed so circumstantial that at our request Mr. Julian Burroughs interviewed Mr. Rice and obtained from him the following statements in regard to this unusual occurrence. Evidently one or more flocks of migrating Swifts selected the chim-

ney of Mr. Rice's house for a roosting-place.

For some unknown reason they flew not only into the chimney but down to the fire-places connected with it, with disastrous results to themselves and Mr. Rice's home.—ED.

Mr. Burroughs writes: "I have been able to verify the story about the 'Swallows' or Swifts. The report of the number killed was greatly exaggerated, otherwise it was true enough. I saw Mr. Rice and he took me in and told me the whole story. They did not kill any of the Swifts at all, but many died in the soot in the chimney, ten water-pails full, he said, down in the bottom of the chimney, smothered in the soot, and in their efforts to drive them out of the chimney about a thousand perished. Mr. Rice said:

"Saturday night a big flock of the Swallows were seen about my chimney, and I was sent for to come home, and when I opened the living-room door the rush of birds knocked off my glasses. I got to the window, covering my face with my arms, and got the window open. About 1,500 went out. Then we switched off the light, and when we turned it on again there were Swallows on all the mouldings and pictures, and these we picked off and threw out of the window, when they flew away. Later we found them behind all pictures and furniture. These we put out. They had brought the soot out of the chimney until it had to be shoveled up, and their wings marked up the ceilings, while their droppings marred the walls and furniture. On Monday they were still in the chimney and when I made a paper fire in the grate they drove the smoke down with their wings. I went to the furnace in the cellar and there were about fifty live ones and fifty dead in the furnace—also ten water-pails full of dead ones in the pipes and bottom of chimney."

Magpie in Iowa

In November, 1921, I wrote you about the Magpie in Iowa. In accordance with your desire, I write now to tell you that the Magpies stayed here all winter, going in flocks. They were very shy, it being almost impossible to get near them.

This spring the flocks seemed to disband and only a pair would be seen at once. For the past two weeks none have been seen or heard and I do not believe there are any here now.—LAURA BRADY, *Sutherland, Iowa*, May 19, 1922.

The Story of a Young Blue Jay

Several years ago I had a young Blue Jay. Christie, for so I named him, was found early one morning in June on a farm in the Susquehanna valley. He was immature; tail still short, and plumage not perfect yet. One wing was injured, so he could not fly. My boy took food in his fingers and moved it to and fro before the bird's mouth, when, presto! the bill flew open as if by magic, and the food was put in. We put vaseline on the torn wing and it soon healed. At first he was kept in a crate with food and water by him, and he soon learned to eat and drink. He liked bread and milk, meat cut up fine, and red raspberries. As the wing healed and he could take little flights, he was given his liberty in the big dining-room, having one corner as his own particular place. Part of the family grew very fond of him, and others did not like him. He knew his friends at the long table and would fly on one's shoulder or even on the head of the man who saved him. The two who did not like him he never went near.

I have fed Blue Jays for many winters but never dreamed what affectionate birds they were until I had Christie. I knew three or four separate calls very distinct from the others they have, but Christie taught me another, or rather a low, sweet song. He would fly on top of the inside doors and sing so softly and sweetly when the house was quiet and only one or two present. The outer doors were screened so he could not escape.

He delighted in baths and had his bath-tub by his food. One day some water was spilled on the painted floor, and down he flew for a bath; and once he flew into a big pail of water. Such a frolic, and how the water flew!

I once saved a young Robin and cared for him, and he showed his appreciation by opening his gold-lined mouth and biting me wickedly. But Christie showed only love and

trust. After he was fully grown and well, he escaped one day through the door. He flew up in a tall locust tree in front of the house. The farm was simply infested by cats, and a hungry cat was everywhere present, so I trembled for Christie. He knew his name as well as I knew mine, but my call of 'Christie, Christie' from the front porch brought no response. Liberty was too sweet. All through a windy, dark night he stayed in the tree supperless. The next morning when I called, his appetite was too strong, and he flew down on the porch. I carried him in rejoicing, and what a meal he ate! But he was soon given his freedom and disappeared.—ALMEDA A. COLLAN, *Mount Upton, N. Y.*

Starling Nesting in South Carolina

On April 24, I saw a black bird perched on a wire. As I had a pair of glasses with me, I was able to identify it as a Starling. A moment later it dropped to a lawn and walked along in the most approved Starling style.

A few days later, while talking with Dr. L. J. Blake of this city, I mentioned the event of that morning and he told me that he had a report of a black bird nesting on a trolley-pole. On May 7 we were able to get out to investigate the report and found a pair of Starlings nesting in an old Woodpecker hole.

These are my first personal records of Starlings in South Carolina. Miss Baugham, of the Kennedy Library staff, this city, tells me that during the spring migration of 1918 she saw a black spotted bird with large, light-colored bill, walking along a fence near her home. Doubtless this was a Starling.

If any of your readers have records of Starlings in South Carolina, the writer would be glad to hear from them.—GABRIEL CANNON, *Spartanburg, S. C.*

Home-Life of the Purple Finch

The Purple Finches are nesting in a pine tree outside my window where it is possible for me to observe their domestic relations!

The song of the male is very pleasing. It is full of life. It has strength, clearness, brilliance. It is not very frequently heard,

not nearly so often as the song of the Towhee or Robin, for example.

The Finch has a simple, but definite and well-modulated song, or succession of notes, with considerable variation in what he sings, and which is all too short in duration. One listens and feels a regret that too suddenly it has ceased!

Possibly the absence of frequency tends to make the song more welcome. One may suddenly, when and where least expecting it, hear the Purple Finch begin his combination of Warbler-like notes, trills and song. Then it is silent; possibly in a few minutes we will hear it again in the same spot, but more often the song is detected from another location—to the left or to the right or behind you, fainter or more clearly, showing a change of base, so to speak.

This pair interests me particularly because of the apparent devotion of the male to his partner! He will suddenly appear in the nesting-tree and sing, possibly, in a tree near that in which his wife is performing her family duties. Seemingly it is a meal-time bell, or a call to a feast, for Mrs. Finch will at once hop off the nest and approach her lord with fluttering wings and uttering at the same time a most coaxing series of notes. It reminds me, every time I see or hear it, of the attitude that young birds assume in begging of the parents the food they seem never to have had a supply in satisfying quantity! Then Mr. Finch pushes his beak down the yawning mouth.

This occurs not once but repeatedly. I wonder if he is not regurgitating the food he has fetched with him. I may be wrong in this, but if it were in one clump or mass, he could easily place it in her bill at 'one sitting'—make one 'operation' of this love scene—but no, he deftly inserts his mouth in hers. Then he withdraws it, turns his head one way, and repeats the feeding; then in another direction repeating the feeding, for all intents and purposes treating the female as though she were a fledgling! Is this the common way of doing things in the domestic economy of Purple Finches? I never before have been where they seem to be so numerous. This certainly is Finch country and this pair is both fearless and friendly.

After giving his mate all that he may have in hand, so to speak, he suddenly will turn away, hop off to another branch in the tree, with Mrs. Finch after him in close pursuit and most insistent for further feedings. But he still moves away and then will fly from the tree most peremptorily. Sometimes Lady Finch pursues him for a distance; at other times, perhaps thinking of her nest and the unborn babes she must guard, she desists from pursuing her master and hops on to the nest, wiggling her body from side to side as she brings her wings closer to her side in the act of hovering—precisely after the manner of an old sitting motherly 'Biddy'!—HENRY H. COVELL, *Minnewaska, Ulster Co., N. Y.*

A Junco Wave

Leaving the house at 4 o'clock Monday morning, April 3, 1922, to catch an early train, I noticed many small birds sitting on the ground and in the street, which would flutter up just from under my feet and alight a few yards beyond. It being too dark to discern them sufficiently to identify, I passed on, wondering at their numbers and at their being on the ground. On my return at the end of the week, a number of people spoke to me of the occurrences of that Monday morning. The birds were Slate-colored Juncos, and when people woke up in the morning, the town was full of the birds, all sitting stupidly on the ground until nearly trodden on. Quite a number were picked up, seemingly inert, but the moment they were handled, they cried out and viciously attacked the hand of the person who held them. A local butcher left the transom of his shop open Sunday night, and in the morning there were about forty of the birds in the place. It had drizzled rain all night, and could it be that the birds were so drenched and 'fagged' out that they could not fly? For, as the morning cleared and the sun came out, they soon found their place in the trees.

There has been a dearth of Juncos all winter in this section of Iowa, and different ornithological friends of mine from over the State report the same for their vicinities. Out of curiosity I wrote to a number of individuals in the southern part of the United States

who had reported the Juncos in large numbers in the Christmas census, and they informed me that there had been an unusually large number of Juncos in the South the past winter. I know of no reason for the scarcity except that during the early part of the growing season in 1921 we had a period of drought which might have curtailed the production of weed seed and thus deprived them of food.—CHARLES J. SPIKER, *New Hampton, Iowa.*

Cardinals Nesting in Collins, N. Y.

I wish to report the nesting of the Cardinal Grosbeak in Collins, Erie County. I have a nest under observation, the earlier one having been robbed.

Since May 5, 1913, there have been Cardinals on the Cattaraugus Indian Reservation, but this is the first time I have found them nesting. The first nest was built May 7, the second begun May 15, in the woods of the Gowanda Hospital.

The Alder Flycatcher continues to breed in this vicinity. Two or three pairs are in close walking distance, but the only nest I have found was June 13, 1917.—ANNE E. PERKINS, M.D., *Collins, N. Y.*

A Two-Story Nest

I sat one day in a grove on a side hill watching a little Yellow Warbler in great trouble. Ten feet from me was a bush in which her dainty felted nest was placed. She had laid one exquisite white, brown-spotted egg; but while she had been absent feeding, and doubtless rejoicing with her mate over their new home and prospective family, a black bird many times her size that had been watching her movements from a nearby tree, slipped into her nest and deposited her own larger and sinister looking egg—a dusky egg, heavily and irregularly spotted with dark brown.

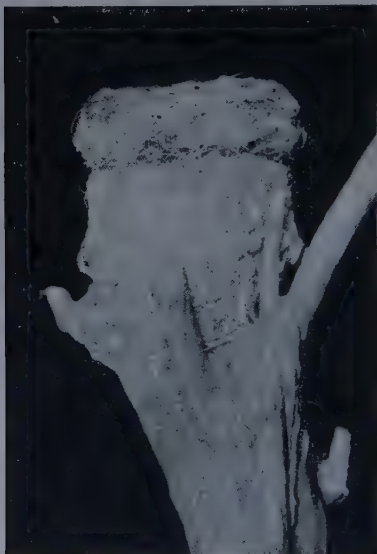
The interloper was the detested Cowbird. These birds are innocent looking enough, about the size of the common Red-winged Blackbird, but they build no nests of their own. They may be seen any summer day following close behind cattle and horses

grazing in our pastures and feeding on the insects which they disturb as they graze. Thus, even in their feeding, they make the animals work for them.

When the females lay their eggs they go to swamps and lay them in the nests of their cousins, the Red-winged and Yellow-headed Blackbirds; or to groves or orchards where they find the dainty nests of the Yellow Warbler, or the nests of other birds smaller than themselves.

I have never found their eggs beside other than spotted eggs. They seem to be too

bringing billfuls of thistle-down, but would not even light upon the edge of her nest. Indeed, she seemed to regard her nest as a defiled thing because the enemy egg lay beside her own. She lit upon a branch near enough to reach over and drop the thistle-down upon the two eggs. The fact was that she was beginning a new nest, which was to rise above the first. She was burying her own egg together with that of the interloper; and not until she had built a complete new nest above the first one did she lay her clutch of dainty eggs and rear her young.—CRAIG S. THOMS, *Vermillion, S. D.*



A TWO-STORY NEST

shrewd to lay them in the nests of birds larger than themselves, or in nests with unspotted eggs, like those of the Mourning Dove, Robin, or Catbird.

They are among the worst enemies of our birds, for their eggs hatch more quickly than most other eggs, and their young grow with extraordinary rapidity, taking most of the food and literally crowding the rightful young to the wall of the nest. Sometimes two, three, or even more of these eggs will be found in a single nest.

The strange fact is that only the little Yellow Warbler seems to understand the danger of these enemy eggs. As I sat watching the little yellow lady in trouble, she kept

Resourceful Cliff Swallows

It is often said that the Cliff Swallow is unable to construct its nest under the cornice of a building when the wooden surfaces are painted, and no doubt it is true that examples of its nests properly adhering to such surfaces are so infrequent that the rule is in accordance with the general belief. An example of an exception to the rule has been noted by me in Jaffrey, N. H., where three pairs of this species have successfully nested during 1920 and 1921, attaching their nests to smooth, painted surfaces formed by the base of a cornice and the finishing board adjoining. One nest was built in a corner and therefore had three surfaces of attachment, the others being detached nests with only two surfaces of contact. The wood was apparently planed before painting, so that these latter nests were built under conditions of maximum difficulty.

Sometimes, however, the problems of constructing a nest under such conditions are solved by a resort to a radical departure in nesting habits. Such a case was observed by me at Meriden, N. H., on July 3, 1921. Here, under the cornice of the gymnasium belonging to a private school in the village, whose finish was painted wood, two telephone wires incased in tubular insulations entered the building, passing through a board about 8 inches below the bottom of the cornice. These wires were horizontal, were placed at the same height, and were about 3 inches apart. During 1920, or earlier, a pair of Robins built a nest on the wires about 4

inches from the woodwork. I am not informed whether or not the pair of Swallows attempted first to build a nest in the angle under the cornice, but, be this as it may, the old Robin's nest revealed nesting possibilities hitherto untried by the newcomers, who, beginning at the rim, simply domed over the old nest and constructed the usual retort-like projection having a circular entrance. The nest was not in contact with the building at any point, but simply rested on the Robin's nest which in turn rested on the wires. At the time of my visit the old birds were industriously feeding their young, then nearly full-grown.—CHARLES L. WHITTLE, *Cambridge, Mass.*

A Thrasher's Bath

Early in May I saw a Brown Thrasher take a bath in an unusual way; while a very slow, mist-like rain was falling it flew into the top of an old, flat-topped lilac bush in a queer, fluttering way. Then it flew or jumped up and down on top of the bush, each time going under, or partly under and among the leaves, which were dripping wet. After jumping around in the top of the lilac several times, the bird flew on to a pear tree limb nearby, where it preened its feathers as birds do after bathing.—FRANK AIKIN, *Decatur, Ills.*

Titmouse and Squirrel

On my walk today, a short time after I entered the woods, I heard a Warbler song that was new to me, and while looking for it, I noticed a Titmouse near the top of the tree that was quarreling even more vehemently than usual with something. I would have paid him no attention as they are very common here, but while searching for the Warbler I saw that the Tit's argument was with a red squirrel's tail, which was hanging down from a crotch. He continued fussing a

minute or two, then flew down, perched on the trunk beside the tail, and gathered himself a mouthful of hairs, the squirrel seemingly paying him no attention. At first I supposed that the squirrel was dead, but when I started to walk around the tree he kept himself on the other side of the trunk, as usual. The Titmouse followed him around, took a few more hairs, and flew away, only to return in a very few minutes for more.—PREWITT ROBERTS, *Conway, Mo.*

An Odd Place for a Nest

In a dance hall in Hartland, Wis., there is an unused chandelier. Through a broken



window-pane a Robin gained entrance and built her nest in the receptacle of this chandelier, and reared a brood in peace and safety.

THE SEASON

Edited by J. T. NICHOLS

XXXII. April 15 to June 15, 1922

BOSTON REGION.—Many years ago it was written of this part of our New England spring. "Then seems to come a hitch,—things lag behind, till some fine morning Spring makes her mind." This season the delay came late in April when on five days the temperature fell nearly or quite to the freezing-point and the migration of birds came to a standstill. But immediately after the cold snap, the birds began to move northward again, the House Wren, Barn Swallow, Myrtle Warbler, and White-throated Sparrow appearing on the first warm days (April 26 and 27). On May 3, following a marked rise in temperature with a west wind, there came another flight, comprising Towhees, Brown Thrashers, Chimney Swifts, and several resident Warblers, a flight which brought the migration up to date. In some cases, as Mr. Nichols aptly says, "the tide of birds was running ahead of the calendar." Another prominent migration-wave, on May 10 and 11, again following warm weather, brought the Rose-breasted Grosbeaks, Kingbirds, Ovenbirds, Bobolinks, and other summer residents, and with them came a few transient species, *e.g.*, Blackburnian and Parula Warblers. These were closely followed by a host of North-breeding birds—Olive-backed Thrush (May 13), Tennessee and Magnolia Warblers (May 14).

During the migration of Warblers in the latter half of May, the Magnolia was noticeably abundant and the Blackburnian rather more numerously represented than in most seasons; the Blackpoll, however, a Warbler which is generally our commonest and most conspicuous transient in both migrations, was rare with us here in Lexington. I did not personally see a single one and am at a loss to explain how a bird which year after year over-ran this region—whose unmistakable song was heard day after day in the spring—how this ubiquitous and abundant Warbler can have so strangely disappeared.

The Yellow-throated and Warbling Vireos,

the Wood Pewee, and the Yellow Warbler, four birds which have markedly decreased locally during the past ten years, are this season fairly well represented here. The Wood Pewee is especially welcome and has returned to many of its former breeding-stations. The Yellow-billed Cuckoo and the Indigo Bunting, on the other hand, are present in small numbers. The rarity of the Cuckoo is not surprising, for its numbers fluctuate widely from year to year, but the Indigo Bunting has for years been a constant and common breeder and its scarcity is hard to explain.

There has been good evidence of an increase in the number of Killdeers visiting the region this year. Dr. Glover M. Allen tells me that a pair of these birds has frequented the vicinity of Soldiers' Field, Cambridge, during the late spring and early summer. Mr. George Nelson heard a bird calling late in May in Great Meadow, East Lexington, and four birds have been noted lately, also in Lexington, two of which have been under observation for a month. These records are in accord with the statement by Dr. C. W. Townsend in his 'Supplement to the Birds of Essex County,' 1920, p. 93. "This species [Killdeer] has changed in the last seven years from a very rare and somewhat accidental visitor to a summer resident."—WINSOR M. TYLER, *Lexington, Mass.*

NEW YORK REGION.—As noted in the previous report, warm weather in mid-April was marked by the arrival of several species of birds well in advance of their ordinary dates. A few House Wrens came at this time, establishing earliest records at several stations: April 10, Glen Ridge, N. J. (Mrs. F. M. Talbot); April 14, Islip, Long Island (Miss E. R. Jenks); April 15, Rhinebeck, N. Y. (M. S. Crosby); April 18, Montclair, N. J. (R. H. Howland); April 19, Garden City, Long Island (J. T. N.). There followed clear but cool weather with protracted

northerly winds and an almost complete cessation of migration.

In the first days of May, a slender steady stream of new birds from the South was setting in, with a small wave of migrants on May 2, and a more pronounced one on May 7, wherein the first Baltimore Orioles arrived in most sections and scattering individuals of several species appeared at a very early or even record date. A lull of two days was followed on May 10 by the only spring wave of transients of any considerable magnitude. Warblers were present in abundance for the first time, the Magnolia Warbler being especially numerous. The birds in Central Park from this wave moved out immediately. At Garden City they remained for two or three days, and at Rhinebeck, up the Hudson, transients from the same flight or an accumulation of arrivals were still exceedingly abundant the following Sunday, May 14 (Crosby and Murphy), whereas but few remained in the immediate vicinity of New York City. In the ten days that followed, the Blackpoll Warbler arrived generally, but a scarcity of transients and the advanced foliage of the trees simulated conditions which one usually finds the last of May at the 'tag-end' of land-bird migration. The spring army of birds had already passed this latitude into the North at an exceptionally early date, and on the whole the migration was one of the scantest and earliest in the memory of local bird students. That a number of species were late, not early in being recorded may, in some cases, be accounted for by their scarcity.

Among early records are: May 3, Magnolia Warbler in Central Park (L. Griscom); May 7, Canadian Warbler at Bronx Park (Starck) and at Englewood (Griscom); Gray-cheeked Thrush at Englewood (Griscom); May 10, Olive-sided Flycatcher in Central Park (Griscom).

The nest of a male Brewster's Warbler mated with a female Golden-winged Warbler was found during the Wyanokie (N. J.) bird census by T. D. Carter and R. H. Howland, and the Brewster's Warbler and three of the young later photographed and banded. This interesting find will be reported in detail elsewhere. A pair of Cerulean Warblers nested at Poughkeepsie (George Gray and

other members of the Dutchess County Ornithological Society). A Redheaded Woodpecker nested at Garden City. A Lark Sparrow was observed at Montauk, Long Island, June 12 (J. T. N.)—J. T. NICHOLS, *New York City*.

PHILADELPHIA REGION.—Among the migrants arriving in April, the Bonaparte's Gull was by far the most conspicuous; so many of these birds were flying above the surface of the Delaware River and resting on the tidal flats that it was a difficult task to estimate their numbers with any degree of accuracy. April 15, first noted about 200 resting on bar; April 27, most numerous, flock of about 500 feeding on the river near mouth of Cooper Creek; May 6, last noted, 6. It is probably safe to say that at no time during the last twenty years, at least, has there been any such flight of these little Gulls. They were certainly as numerous as Herring Gulls are at any time during the winter months.

By far the most interesting record for the season was made by Mr. John A. Gillespie, who discovered a Yellow-crowned Night Heron at Glen Olden, Pa., April 23. The Heron made its headquarters in a rather heavily wooded glen and could most often be found early in the morning or rather late in the evening. At the suggestion of Mr. Gillespie, a trip was taken to the bird's retreat on May 15, and after a rather exciting wait, true to his custom, the bird appeared flying as silently as an Owl, and lit on a nearby beech tree, where an excellent view was obtained of its plumage, including the conspicuous white crown and cheeks and rather short plume. On May 29 the Heron was still about, according to report, though no mate had been observed.

No bird student could fail to note the abundance of Mourning Doves in this region; they seem to be becoming more numerous yearly, their soft, cooing notes being heard on all sides in the April woods and groves. Five nests were discovered without undue effort in a comparatively restricted area near the city. One of these nests contained the usual two eggs and was placed directly on the ground. The Warbler migration was not, it seemed, up to the usual standard, there

being no apparent pronounced waves which are a special delight to the bird-lover. This condition was no doubt due to the favorable weather conditions encountered, the migrants passing through without delay. Certainly the bulk of the Warblers had come and gone by May 14. On May 14, an excursion by canoe from New Lisbon, N. J., to Mt. Holly, via the Rancocas Creek, piloted by Mr. Nelson Pumyea, yielded 83 species, only three of which were at all out of the ordinary run of birds expected at that time of year (Loon, Osprey and Golden-winged Warbler). The apparent total lack of some of the more common migrant Warblers was surprising. Those who were out a few days earlier saw many more, and among them were found a scattering of Tennessee, Wilson's, and Cape May Warblers. The Yellow Warbler, Yellow-breasted Chat, House Wren and Wood Thrush seem to be decidedly more common than usual this year.

The coast migration of shore-birds is reported to have been very satisfactory, numerous Hudsonian Curlew, Dowitchers, Turnstones, Greater Yellow-legs, a scattering of Knots, and a host of smaller Sandpipers passed through during the latter part of May. Least Sandpipers and Semipalmated Plovers are still here at Camden June 9.

Two young Yellow-billed Cuckoos out of the nest and able to fly short distances (June 8), seems a rather early date for such an occurrence.—JULIAN K. POTTER, *Camden, N. J.*

WASHINGTON REGION.—The spring migration of 1922 about Washington proved to be unusually interesting. Most of our summer residents and transients arrive from the south in April and the early part of May, and during these two months of the present year there were not only gratifyingly large numbers of birds present, both of species and individuals, but many rare or otherwise attractive ornithological visitors made their appearance.

The weather was moderately cool up to the middle of May, thus setting the stage for a migration movement that in many respects was about normal. The four most noticeable migration waves occurred (1) from April 29

to 30, its effect lasting until about May 3; (2) May 7; (3) May 10 to 12; and (4) May 14. In all of these the migration movement began on the night of the day preceding the first dates above given. The height of the migration season was about May 12, and the tide rapidly receded after May 14, until by June 1 practically all of the transient species had passed northward.

The cold weather of the early spring induced a few species to remain later than usual, as, for instance, the Ring-billed Gull to May 14, its average date of departure being April 21; the Pied-billed Grebe, noted up to May 13, the average departure of which is May 3; and the Yellow-bellied Sapsucker, April 29, the average departure of which is April 23. The Canada Goose, moreover, was observed as late as April 21, on which date Dr. H. H. T. Jackson saw a flock of 50 to 60 flying over the city of Washington, which record is three days beyond its previously latest spring stay (April 18, 1920).

A feature worthy of mention is the generally early arrival of the spring migrants. About thirty species were from three to eighteen days ahead of their average spring appearance, and some of them close to their best records in this respect. Furthermore, the Wilson Thrush noted on April 9 by Mr. F. C. Lincoln, at Plummer Island, Md., was thus earlier than its previously early appearance of April 20, 1889; and the Traill Flycatcher, seen May 7 in the National Zoological Park, was one day ahead of its previously earliest spring record (May 8, 1906). A few species, however, most of them normally rather late migrants, such as the Long-billed Marsh Wren, Yellow-breasted Chat, Nighthawk, and Scarlet Tanager, were unusually late in putting in their appearance, but this may be due to lack of observations, an element always liable to cause error in records of the non-appearance of species in the spring.

Among the birds taking part in this spring migration were a number that were unusually numerous, such as the Tennessee Warbler, Bay-breasted Warbler, Myrtle Warbler, Canadian Warbler, Scarlet Tanager, and the Purple Finch. Some, however, that should be common were apparently decidedly un-

common or even rare; the most conspicuous cases of this kind being the Chestnut-sided Warbler, Blackburnian Warbler, Rose-breasted Grosbeak, Kingbird, and Bobolink.

Of rare or otherwise notable occurrences the spring of 1922 produced rather more than usual. The White-crowned Sparrow, which we have previously reported as wintering about Washington, remained in Dr. C. W. Richmond's yard on the outskirts of the city until May 6, having been previously noted by him on April 30, May 1, and May 4. A White-crowned Sparrow, probably another individual, was seen by Miss Katherine H. Stuart at Fort Myer, Va., on May 9.

The Prothonotary Warbler, which seems to be of more or less regular occurrence and possibly breeds about Dyke, Va., was reported a number of times this year, first on April 22 by Miss Stuart. A single bird was also noted in the National Zoölogical Park by Mr. A. H. Howell and a number of other persons.

Two Black Vultures were seen at Laurel, Md., on March 25, by Mr. E. B. Marshall. This species is of only occasional occurrence about Washington, and this record is therefore noteworthy.

Mr. R. W. Williams reports finding a nest of the Florida Gallinule containing ten eggs on May 11 on Alexander Island, Va., in the Potomac River near Washington. This makes the third breeding record of this species for the vicinity of Washington, although it may be more common than observations hitherto have indicated.

Two nests of the Virginia Rail containing eggs were found by Mr. A. H. Hardisty on what is known as Little River, a channel of the Potomac River along Analoastan Island near Washington, on May 26. This is the second authentic record of the breeding of this species in the Washington region. A nest of the King Rail was found by the same observer on May 14 in the marshes near the Arlington Experiment Farm not far from the city of Washington, which record is worthy of mention in view of the rarity of this bird as a breeding species in this vicinity.

Up to the present time the only record of the Willow Thrush for the vicinity of Washington was a single bird obtained by Mr. Ned

Hollister on September 2, 1920, but we were fortunate enough to find another one on May 7, 1922 in the National Zoölogical Park in the city of Washington.

By far the most interesting occurrence of this spring, however, was the appearance of the Evening Grosbeak in the Washington region, since it adds this famous bird to the District of Columbia fauna. So far as we are aware, this Grosbeak, east of the Allegheny Mountains, has heretofore not been recorded farther south than Mount Holly, N. J., and Haverford, Pa., both of which localities are not far from Philadelphia. The first report from the Washington region came from Cambridge, Md., where it was reported by Mr. W. D. Gould during the latter part of January. Later, on April 3, five were seen by Mr. George Marshall, at Laurel, Md., and six on the two following days. It appeared in the National Zoölogical Park at Washington on April 21, on which date several were seen by Mr. William Hopkins. From this last date on until May 13 it was seen on almost every day in practically the same place in the Zoölogical Park, where often on the ground it fed regularly on the seeds of the box elder and elm, and on the buds and flowers of other trees. Its characteristic notes were frequently heard, and an attempt at song was once noted by Miss Katherine H. Stuart. While a majority of the individuals apparently remained in the vicinity of the Zoölogical Park, the species was reported also at Takoma Park, Md., on April 23; and by Miss M. T. Cooke on May 6 at Cabin John Bridge, Md. The last straggler of which we have any record was noted on May 26 at Glen Echo, Md. Bird-lovers in the vicinity of Washington are interested to see whether or not this distinguished northern visitor will repeat its visit in the near future. —HARRY C. OBERHOLSER, *Biological Survey, Washington, D. C.*

OBERLIN (OHIO) REGION.—The latter half of April was cold and unfavorable, so that the migration brought in but a few new arrivals. On the night of the 20th snow fell to a depth of three inches, and on the 21st and 27th there were exceptionally severe frosts. The House Wren came on the 17th

and the Spotted Sandpiper on the 18th. The Sora, Florida Gallinule, and Bank Swallow were first noted on the 24th. With the last two days of April the weather became more favorable bringing Green Heron, Water Thrush, and Catbird on the 29th, and Baltimore Oriole, Black-throated Green Warbler, Black and White Warbler, and Common Tern on the 30th.

The weather for May was generally fair and warm so that the migration progressed quite steadily. Increased numbers of the Red-headed Woodpeckers were noticed on May 2. Warbling Vireos and Blackburnian Warblers came on the same date. Ovenbirds and Wood Thrushes, although first found on the 2d, probably arrived a few days earlier. Kingbird and Northern Yellowthroat came on the 4th, Cerulean Warbler on the 5th. On the 6th, on a hike taken to the lake, a number of new migrants were found, Crested and Least Flycatchers, White-crowned Sparrow, Scarlet Tanager, Red-eyed Vireo, Magnolia, Nashville, Chestnut-sided and Blue-winged Warblers, Blue-headed Vireo, Long-billed Marsh Wren, Veery, and Olive-backed Thrush. Yellow-throated Vireo, Tennessee Warbler, and Redstart came on the 7th, Caspian and Black Terns, Semipalmated Plover, Orchard Oriole, and Ruby-throated Hummingbird on the 8th.

There seems to have been a lull in the migration now until the 11th. Between the 11th and 13th the height of the migration was reached. During this period the arrivals were the Wood Pewee, Bay-breasted, Black-throated Blue, Wilson, Canada, Mourning, Prothonotary, and Prairie Warblers, Yellow-breasted Chat, Acadian Flycatcher, Piping Plover, Whip-poor-will, Indigo Bunting, and Rose-breasted Grosbeak. The first Black-poll Warbler was noted on the 18th.

A last small wave came on the 20th and 21st bringing the Olive-sided Flycatcher and taking away most of the Warblers. However, a few Wilson, Magnolia, Canada, Mourning, and Black-poll Warblers were still with us on the 27th.

The Warblers on the whole and the Magnolia, Cerulean, and Black-throated Green in particular seem to be exceptionally numerous this spring. The Mourning Warbler has

been seen a number of times, while the Black-throated Blue on the contrary has been represented by only a very few individuals.

Of the winter birds the Tree Sparrow and Brown Creeper departed about the normal time, the Golden-crowned Kinglet and Red-breasted Nuthatch somewhat before and the Junco and Purple Finch somewhat after theirs.—S. CHARLES KENDEIGH, *President of Cardinal Ornithological Club, Oberlin, Ohio.*

MINNEAPOLIS REGION.—The third week of April continued cold and raw. The ice in the larger lakes in the vicinity of Minneapolis went to pieces slowly, disappearing finally shortly after the middle of the month (Lake Minnetonka, April 16), but in the northern part of the state it remained some days longer (broke up in Lake Itasca April 23, Orcutt Frost) and drifting ice was present in Lake Superior throughout the month. At Minneapolis, on May 19, the temperature fell to 27° and a blizzard with a fall of 2 to 6 inches of snow visited all parts of the state. The snow soon melted in the south but lasted a day or two farther north. The weather service reported this the worst April storm in Minnesota since 1907. Real spring weather followed quickly in the wake of this final blast of winter and throughout the remainder of April and all of May the weather continued fairly equable, temperatures in the daytime rarely sinking below 50° or rising above 75°. There were a few hot days in mid-May which changed a previously backward, lagging spring into a rapidly advancing one, so that the season jumped all at once, about May 20, into conditions very like early summer. Before this time the spring had been regarded, from the farmer's standpoint, as a late one and a lack of sufficient rain had furnished an additional drawback. Following the early freshets, the lakes and streams were abnormally low and the marshes and swamps unusually dry.

June thus far has been a hot month and there has been a considerable increase in rainfall but this, unfortunately, has come in the shape of severe downpours, accompanied at times by high winds reaching in places tornado violence, wrecking thousands of trees and doing great damage to property of

various kinds. These terrific storms must have been very destructive to nesting birds.

The most marked feature of the bird migration at Minneapolis this year was the almost entire absence of the usual mid-May Warbler wave. Nearly all the possible species were seen by one or another observer but for the most part in only limited numbers. At Red Wing, on the Mississippi River, about 45 miles southeast of Minneapolis, there was a single large flight of mixed Warblers on May 9 which lasted only a single day (Miss Densmore). A probable explanation of their failure to appear here is that the advent of hot weather caused them to make an abrupt forward movement of such length that it carried them entirely over this locality and there were no succeeding large waves. About the middle of the month we plunged into almost summer conditions and from that time on very few migrating Warblers were seen.

An idea of the progress of the season can be gained from the following outline calendar. I am indebted for many items in this record to the following persons: Mr. and Mrs. F. W. Commons, Mrs. Phelps Wyman, Mrs. C. F. Keyes, Mr. E. D. Swedenborg, and the Misses Carol H. Webb, Agnes W. Williams, and Harriet F. Younglove, members of the 1922 University bird class who did considerable independent field work.

April 15. Turkey Buzzard. Myrtle Warblers at Anoka (Gillis). Striped gopher.

April 16. Hundreds of Myrtle Warblers, the first of several waves. Tree Swallows; Chipping Sparrow; a pair of Brewer's Blackbirds. Robins building. A Kingfisher selecting a nesting place. A Broad-winged Hawk. Marsh Hawk. Mourning cloak butterflies have been out for several days. Hepatica and blood-root in bloom.

April 19. American Bittern.

April 20. Loon. Robin's nest with one egg.

April 21. A large flock of Evening Grosbeaks. Lesser Yellow-legs.

April 22. Brown Thrasher. Large flocks of Flickers have been passing for several days. Hazel in bloom. City lawns are now green and the elms are a russet-brown haze with the swelling flower-buds.

April 23. Chewink; Cowbird; Swamp Sparrow; Yellow-headed Blackbirds (males).

April 24. Chimney Swift.

April 26. Horned Grebes (10 to 12); Barn Swallow; Bank Swallow, a colony just arrived at their holes. Dutchman's breeches in bloom.

April 28. Solitary Sandpiper.

April 29. Common Tern: a flock of 50 Yellow-legs and the following Ducks all in pairs and apparently mated—Bufflehead, Ruddy, Shoveler, Mallard, Ring-neck and Blue-winged Teal. Box-elder, ironwood, cottonwood and elm in full bloom. First dandelions.

April 30. Palm Warblers; many White-throated Sparrows; Flickers digging nesting-holes. Wild ginger and large-flowered bellwort in bloom.

May 1. Wood Thrush. Watched a flock of Double-crested Cormorants on Lake Minnetonka engaged in their curious mating antics.

Wood anemone, marsh marigold and toothwort (*Dentaria laciniata*) in bloom. The white birch trees with their small, light green leaves and slender, drooping catkins look as though draped with delicate lace.

May 3. Black-throated Green, Yellow, and Black and White Warblers; House Wren; Veery; many Grinnell's and one Louisiana Water-Thrush; Dove's nest with young; Sora; one Greater Yellow-legs with the lesser species. The Greater Yellow-legs is a rare bird hereabouts of late years. The Sora Rail has almost disappeared from our marshes during the last two years. The three-flowered geum and ground plum in bloom.

May 5. Rose-breasted Grosbeak and Spotted Sandpiper. Yellow violets in bloom.

May 6. Pine and Tennessee Warblers; Scarlet Tanager; Baltimore Oriole; Clay-colored Sparrow.

May 7. Yellow-throated Vireos at Elk River (Bailey). The trees are now well leafed out and the lawns are green as summertime and everywhere dotted with dandelions. Tulips, daffodils, and the Missouri currant in bloom.

May 8. Maryland Yellow-throat and Red-eyed Vireo.

May 9. Olive-backed Thrush, Catbirds, Least Flycatchers, Kingbird, Ovenbird, Magnolia and Wilson's Warblers, Redstart, Nighthawk. Red-berried elder in full bloom. First white cabbage butterflies.

May 10. Bobolinks, all males. First Goldfinches. White-crowned Sparrows. In bloom: plum and apple trees, wild cherry, junberry, nodding trillium, early rue, white violets, Jack-in-the-pulpit and wild geranium.

May 11. Canada Warbler. Swamp saxifrage in bloom.

May 12. Black-poll Warbler, Black Tern. *Phlox maculata* and blue cohosh in bloom.

May 13. Warbling Vireos, Wood Pewees, and a Harris' Sparrow. Lilacs in bloom.

May 14. Yellow Warbler building. Young Robins ready to leave nest. Last Ruby-crowned Kinglet.

May 15. Many Black Terns. Florida Gallinule. Phoebe's nest, small young. Long-flowered puccoon in bloom.

May 17. False Solomon's seal (*S. stellata*) in bloom.

May 19. Orchard Oriole; this bird is rare here. Yellow moccasins in bloom.

May 20. Three Caspian Terns. Conditions are now generally just like early summer, the first Robins are off their nests; Catbirds, Yellow Warblers and Wood Thrushes incubating; Grackles with young; water-leaf coming into bloom and willows and poplars shedding their seeds.

May 21. Indigo Bunting. Least Flycatcher building. Wild honeysuckle in bloom.

May 22. Saw three cock Ring-necked Pheasants out in a meadow. They are fond of displaying themselves in open, low ground where they are very conspicuous. This bird has become quite common hereabouts.

May 23. In bloom: Scarlet painted cup, wild lupine, spiderwort, blue-eyed and yellow-eyed grass.

May 27. Red-backed, Baird's and Semipalmated Sandpipers associated in same flock. Brood of Mallard Ducks just hatched; both parents with them.

May 29. Wild roses in bloom and the great-flowered pentstemon just coming out. Hillsides gay in places with the golden ragwort. Heard a Baltimore Oriole uttering incessantly a distinct, clear-cut *chevink* call! Different individuals of this species not uncommonly possess calls and even songs that closely resemble the notes of other birds.

May 30. Wood Thrush just hatching. Red-eyed Vireo's nest, one egg.

June 1. Watched two female Cowbirds trying to enter same Yellow Warbler's nest while the Warbler endeavored to prevent them.

June 2. A Hummingbird's nest, bird incubating; seven Yellow Warbler's nests, eggs just hatching in two; six Least Flycatcher's nests, birds sitting; a Veery's nest, four eggs. Stemless lady's-slipper, pitcher plant and tufted loosestrife in bloom.

June 3. Wild red phlox in bloom.

June 5. Wild iris in bloom.

June 6. Two nests of the Spotted Sandpiper with eggs. Nest of the Rose-breasted Grosbeak with young.

June 9. Northern bedstraw (*Galium boreale*) in full bloom.

June 11. Nest of Marsh Hawk with three eggs and one newly hatched young.

June 12. Green Heron's nest with three young just out.

June 14. Nest of American Bittern with four young just emerging from the eggs. Zygadene just coming into bloom.—THOS. S. ROBERTS, Zoological Museum, University of Minnesota, Minneapolis, Minn.

CHICAGO REGION.—The weather during the recent period has been warmer than is usually experienced here in spring. The Sparrows began arriving during the first week in April and continued with other migrants until May, when the first Warblers appeared. There was no sudden rush of Warblers this year but a gradual passing through during the first weeks in May, so that they seemed less abundant than usual. Nesting is in full swing at this time (June 15), and seems to have begun earlier this year.

Ducks were plentiful during the last of April, and Blue-winged Teal, Pintail, and a pair of Shovellers have been reported from various sloughs where they are apparently breeding. A flock of 25 Lesser Scaup have been in the harbor off Chicago for the past ten days—non-breeding birds, no doubt. April 23, Black-bellied Plover were seen in two different localities, and May 2, a flock of 80 from Hyde Lake (A. C. Weed). The abolishment of spring shooting seems to be showing results already.

A few of the rarer birds reported are;

Sandhill Crane, Dunes, Ind., April 16 (W. B. Richardson); Lapland Longspur, Addison, Ill., April 22 (C. J. Hunt); Bachman's Sparrow, Beach, Ill., April 23 (C. C. Sanborn); Evening Grosbeak, Washington Park, May 5 (A. Lewy); Grasshopper Sparrow, Deerfield, Ill., May 6 (C. C. Sanborn); Yellow-breasted Chat, Dunes, Ind., May 14 and 21 (C. J. Hunt), and Deerfield, Ill., May 22 (H. K. Coale); Philadelphia Vireo, Deerfield, Ill., May 21 (H. K. Coale).

To date, 44 species have been found nesting. Mr. W. B. Richardson reports from the Dunes a Marsh Hawk nest with *eight* eggs; a Long-eared Owl's nest destroyed before the eggs hatched, and he was attacked by a Great Horned Owl when he attempted to photograph its nest. At Hyde Lake, Ill., Mr. C. J. Hunt and Mr. B. F. Gault found Virginia Rail and Savannah Sparrow nests on June 4. The writer, with Mr. E. J. Scupham, spent from May 20 to 22 on the Kankakee River near the Illinois-Indiana state line, and located many interesting nests. Prothonotary Warblers were plentiful, and, while one nest contained eggs, most of them were just starting to build. Other stubs held Tree Swallow, House Wren, and even an English Sparrow. Two Hairy Woodpecker nests were seen, each containing large young ready to fly. Mr. Scupham later found Crested Flycatcher, Chickadee, Cardinal, and others there. He also reports from Homewood, Ill., between June 5 and 10, the following—Upland Plover, King Rail (two nests, eleven and thirteen eggs), Bittern, Least Bittern, Migrant Shrike, and many other more common ones.

To date 194 species have been reported.—COLIN CAMPBELL SANBORN, *Chairman Report Committee, Chicago Ornithological Society.*

KANSAS CITY REGION.—It is regretted that notes covering only half of the current period can be included in this letter, since the writer leaves shortly after the middle of May for a month or so in more remote and more fruitful fields for the study of nesting habits. However, Messrs. Bolt, Teachenor, and Woodworth, having promised to do a lot of field work during the writer's absence and to keep voluminous notes, it is hoped that the next letter will contain important data.

Spring has been late this year, and, though the early breeders have averaged later in their nesting, the migrants in the main seem not to have been delayed by the cold, wet season. Sizable flocks of Juncos, instead of stragglers merely, may have lingered beyond their accustomed time of departure, but the bulk of these winter visitors left for their northern homes during mid-April as usual. This is mentioned because of the insistence of several local students that the bulk of this species remained long after their regular leaving-time.

A pleasant fact to record is the noticeable increase in Bob-whites in a wide area in the southern parts of the city. On the breaking up of the covies in late April, the cheery and ringing call-notes of this sturdy species have been heard on all sides. Many pairs have been surprised in suitable nesting-places and two nests have been located. It is feared that the local craze for Airedale terriers tends to keep down this fine bird, as ranging dogs of this species in twos and threes are often seen in the places where the Bob-whites nest.

Red-breasted Nuthatches were still present on April 18, three having been seen on that date. On the same day a third specimen of the Western Red-tail was brought in to Mr. Frazier for mounting. The several records of this form this season indicate a local invasion. Redstarts and Kentucky Warblers were heard singing for the first time on April 21, though it is likely that they had been present and silent during several cold, wet days prior to this date. Blue-gray Gnatcatchers had their nests well under way at this time.

April 22 was Harris's Sparrow day, as thousands of these old fellows were singing at a great rate from every tangle and thicket. It is always hard to say just when the bulk of these birds are passing, as they go in waves of varying numbers. They may be here in droves today and gone tomorrow, and in three weeks are common again.

Local students will regret to learn that the Prairie Horned Larks and Killdeer that have always nested on the high prairies in the region of 63d Street and Ward Parkway have at last been driven off by building and grading operations. The many and varied species

that have always found a refuge in the 'plum thicket' nearby are likewise doomed to a speedy exile. A list of breeding species of this delectable spot would, I believe, astonish even its discoverer and one-time chronicler, Ralph Hoffmann. It numbers 48 species!

Pairs of Blue-winged Teal have been observed all spring about ponds near the city and on two of the park lakes within the city. At least one pair have begun building operations, though it is quite too much to hope that they may succeed in bringing off young within plain sight of a busy street-car line and within throwing distance of a boulevard.

Warbling and Yellow-throated Vireos migrating in numbers on April 29 were late, as were Savannah, Vesper, and Grasshopper Sparrows on May 3. Passing Prothonotary and Tennessee Warblers were numerous in the Missouri River bottoms on May 14, and migrating Bitterns were flushed on the uplands near Waldo on the same date.

Up to the middle of May but comparatively few Tennessee Warblers had been heard in the parks and along the boulevards where usually at this season the staccato call of this busy insect-gleaner is much in evidence. The present scarcity would seem to indicate a dearth of canker-worms and other pests of the elms.

Great numbers of migratory Thrushes were present from May 11 to 15 in all wooded situations over the entire region. Professor Shirling reports having seen the Veery (*H. f. salicicola*?) in unusual numbers on May 13 and also having heard the song of this species in his yard near Swope Park. This is the first authentic record known to the writer of the local singing of this bird. The migratory Thrushes are usually silent on their passage through this region, but all save the Hermit have now been heard here at one time or another.

Roy Woodworth reported a small flock of Bobolinks on May 14. Seasons occasionally pass without this species being seen here at all, and it has rarely been heard here in full song.

Notes received from Johnson Neff, of Marionville, Mo., mention the Double-crested Cormorant and Sandhill Crane as two rarities seen at his station in early May.

Much correspondence has failed to bring to light any further data on the Magpie invasion of the lower Missouri Valley. Mr. Charles Dankers' notes on the fifty individuals in Holt County mark, so far as I can learn, the southern limit of the remarkable migration of this species.—HARRY HARRIS, *Kansas City, Mo.*

DENVER REGION.—While the wave of spring migration was slow in reaching us, and then seemingly of small magnitude as compared with previous similar periods, the rush of nesting with our local birds was sudden and most pronounced. There are more young Robins and young House Finches in this vicinity than ever before observed by the writer at this date. Many other species have been found nesting more commonly in the suburbs this spring, to-wit, Lark Sparrows, Lark Buntings, and Meadowlarks. And the Bluebird has nested during the past eight weeks nearer in toward the denser portions of the city than for several years past.

One of the outstanding and very striking features of this season's local bird-life has been the almost total absence of Warblers; a single Audubon's Warbler was seen in one of our parks on April 28, another in the outskirts on May 28, and a single Macgillivray's Warbler on May 16. These are the only Warblers detected by the writer, in the city, excepting, of course, our summer resident Yellow Warbler, which arrived here on May 7 (about its average). As usual, it came at once in numbers and has remained common since its first appearance.

One of the great pleasures and possibilities inherent in one's interest in birds, as has often been said before, is the unexpected sight of a rare bird, an experience coming to the writer twice this spring. On April 25, a Golden Eagle was seen majestically sailing over his neighboring park. A few of these grand birds haunt the mountains within thirty miles of Denver, and nest in the canyons within this area.

Gambel's Sparrow was first noted here on April 24, though in all probability it was present in the outskirts much earlier, and the White-crowned Sparrow came in to Cheesman Park on May 8, on which date, and in

the same place, a Gambel's Sparrow, and a White-crowned Sparrow were seen at close range, within a few feet of each other. It is seldom that one has a chance to see these two almost identical Sparrows so close together that one can instantly compare the head markings of the two subspecies, each with the other.

The last White-crowned Sparrows were seen here on May 28. Mocking-birds appeared in the outskirts on May 11, but none have been seen by the writer in any of our parks, though they often have been in them in years past.

An unusually large number of Western Tanagers were in the city between May 14 and May 21, on which latter date six brilliantly colored males were watched for some time within a couple of blocks of the writer's home. This species must have been present in the region in considerable abundance, for many inquiries have come about it, the bright plumage, especially the striking crown, compelling attention of even the most inattentive observer.

Each spring one sees examples of species clinging to districts almost in the heart of the city; again a Flicker has nested close to the Y. M. C. A. building downtown, and on May 25, a Plumbeous Vireo advertised itself by its very insistent and characteristic song near the state capitol. This species has been common since its arrival on May 21, while the Warbling Vireo has been detected but four times this spring, first on May 25.

Both Audubon's and the Olive-backed Thrushes remained in the city longer than usual. Many of both species have been in the parks from May 14 to May 22. On the latter date a singular thing was noted in an Olive-backed Thrush. As it flew from the ground into an evergreen, one could see that it was crippled. Patient and careful stalking brought it into close range, when it was discovered that in some manner the right leg and foot were entangled in the outer tail feathers of the right side, making it necessary for the bird to stand and hop on one foot; this tail and foot entanglement kept the tail spread fan-wise, in 'display', as it were. It is a mystery as to how and why this condition occurred and was continued.

A small wave of Pinyon Jays passed through the city on May 16 and 17, and another on May 28; these dates are rather late for this Jay's spring visits to Denver, though it is true that it may appear here almost any time.

There is no summer resident whose advent here is more welcome to the writer than that of the Black-headed Grosbeak; it always arrives in full song, and it is a singer of great ability and sweetness. This Grosbeak reached the city on May 13, and started its house-hunting at once, so that now its house-keeping duties are in full swing. The writer never sees its frail nest without wonderment that it successfully holds a lot of lusty young ones.

A solitary Lincoln's Sparrow came to notice here on May 17. Perhaps it frequently escapes detection altogether because of its mouse-like habits of dodging under bushes, logs, and rocks. A goodly number of the summer resident species arrived here about on time and in their usual numbers, such as Kingbird, Arkansas Kingbird, Bullock's Oriole, Spurred and Green-tailed Towhees, Rock and House Wrens, Nighthawk, Traill's Flycatcher and Brewer's Blackbird. The writer has seen no Bronzed Grackles this season, though there can be no doubt of their being here. The Wood Pewee is either less common here this spring or more silent, probably the former, as it tends to vary in number from year to year.

A great pleasure was afforded to one of the writer's friends and her son, as well as to the writer, by a sight of a single Grinnell's Water Thrush. It was seen in Washington Park where it lingered two or three days. Unless he is much in error, this is the second record for it for Denver.—W. H. BERGTOLD, *Denver, Colo.*

PORTLAND (OREGON) REGION.—The spring season continued cold and backward in the Oregon district until well into May, and the bird movement seemed to be correspondingly late. Greater Yellow-legs were first noted on April 17, and a considerable wave of migrants, which includes Lutescent Warblers, Cliff Swallows, and Mourning Doves as new arrivals, appeared on the 23d. Western

Martins were first noted two days later, while on the 29th a long list of new arrivals were noted along the Columbia River between Portland and Astoria. The shore-bird flight included the Long-billed Dowitcher, Least and Western Sandpipers, and Hudsonian Curlew in abundance.

A flock of 25 Wood Ducks were noted in the Columbia bottoms on April 23, and a number of pair, presumably from this flock, which remained for several weeks before breaking up, are now breeding in this region.

During the first week in May a great shore-bird migration, principally Long-billed Dowitchers, Red-backed and Western Sandpipers, and Hudsonian Curlew was noted on Yaquina Bay. At this time a few of the winter visitors to the bay were still in evidence. White-winged and Surf Scoters were common and a few Western and Horned Grebes, Loons and Glaucous-winged Gulls were seen. On May 9, Stanley G. Jewett noted three Northern Phalaropes in spring plumage on Rogue River, an unusual inland record.

During the month of May the writer spent a week in Klamath County, which in spite of the drying up of the Lower Klamath Lake Reservation is still a wonderful bird country. While there an opportunity arose to visit the Lower Lake and a great colony of California Gulls were found to have re-established themselves in the flooded section of the lake-bed. Considerable numbers of Ducks of various species were also noted although the area of spring flood water is small compared to the original lake-bed.

The Canada Geese were nesting in numbers. The flooding of the usual nesting-sites has driven most of the birds to the edges of the swamps and causes them to seem more abundant than before. Whether there is any increase in numbers of Ducks or Geese is hard to determine. Several competent observers who had been familiar with the bird-life of the district for several years informed me that both Avocets and Black-necked Stilts have increased in numbers. A number of Avocet nests were discovered which had been flooded slightly, as attested by the alkali deposit on the eggs. In several instances the Avocets, apparently the same birds, had nested again farther up the bank.

At Klamath Falls, from the bridge across Link River, White Pelicans, Western Grebes, Ducks of various species, and Forster's and Black Terns were noted at various times. These birds, particularly the Pelicans, were quite tame. The Pelicans sat gravely about on the piling and logs or did absurd looking things with their big beaks while swimming about in the lake.

About June 1, Band-tailed Pigeons were reported as appearing in numbers along the Columbia River bottoms, and on the third a large flight of Pacific Nighthawks were noted in the outskirts of Portland.—IRA N. GABRIELSON, *Portland, Ore.*

SAN FRANCISCO REGION.—The last dates on which winter visitants were seen in the Bay Region have been reported as follows: Sharp-shinned Hawk, April 29; Cooper Hawk, April 25; Intermediate Sparrow, April 21; Golden-crowned Sparrow, April 24; White-throated Sparrow, April 29; Fox Sparrow, May 3; Cedar Waxwing, May 30; Townsend Warbler, April 12; Pipits (at Baumberg), April 27; Ruby-crowned Kinglet, April 27; and Hermit Thrush April 24.

Summer visitants arriving after April 12 were recorded as follows: Olive-sided Flycatcher, April 28 (Mr. Storer); Western Wood Pewee, April 18 (Miss Wythe); Black-headed Grosbeak, April 19 at Lafayette and April 24 in Berkeley; Yellow Warbler, April 23 (Mr. Storer); Toline Warbler, April 26; and Russet-backed Thrush, May 2 (Miss Wythe). A visit to Lafayette on May 4, in Higher Sonoran territory, showed that at that date Lazuli Buntings, Bullock Orioles, Wood Pewees, Yellow Warblers, Mourning Doves, Green-backed and Willow Goldfinches, and Western Bluebirds were abundant. The Long-tailed Chat was present but not in full song. Bush-tits, Warbling Vireos, and Bluebirds were busy with their nestlings; a Black Phoebe's nest was finished; Linnets, Goldfinches, and Grosbeaks were building. A Nuttall Woodpecker entered a nesting-hole several times but it was not possible to determine the condition of the inside of its domicile. In Berkeley (June 12) young Bush-tits, Lutescent Warblers, and San Francisco Towhees are following their

parents and begging for food; House Wrens and Western Flycatchers are still unfledged; young Robins have been seen; and young English Sparrows are looking fat and prosperous.

Four kinds of Swallows have been seen in localities widely separated. At Baumberg, on April 27, Cliff Swallows were building scores of nests under the eaves of an old barn. Barn Swallows were also present but in smaller numbers. On May 20, Violet-green Swallows were conspicuous in the Marin County hills above Ross Valley and Rough-winged Swallows were reported by Mr. Storer as present in a canyon near Muir Woods.

Migrants are not abundant among the land-birds in this region. The only records available are of Rufous Hummingbirds seen April 19 and Western Tanagers May 16 to 19. A flock of migrating Warblers were in evidence in Strawberry Canyon on May 19—a rainy day. A Cassin Vireo was seen on the university campus May 11 and in Claremont Manor May 30. The continuous presence of a pair of Creepers on the university campus suggests the possibility of a breeding record.

On April 20, Dowitchers were very abundant on the salt marshes of Alameda. A few Semipalmated Plover and Hudsonian Curlew and one Black-bellied Plover were also seen. On the fresh water at Baumberg, on April 27, Yellow-legs, Avocets, White Pelicans, and Bitterns were added to the list of waders. On May 28, baby Mallards in assorted sizes trailed after the parents on most of the lakes.—AMELIA S. ALLEN, *Berkeley, Calif.*

LOS ANGELES REGION.—On April 16, Bonaparte's Gulls were wearing their dark hoods, the Red-backed Sandpiper had assumed full summer plumage, and Black-bellied Plover were in various stages of change.

On April 17 occurred the first notable wave of Warblers of the season, including all the species that occur here except the Chat, which was not reported until the 24th. During the succeeding two weeks the early scarcity was compensated for by large accessions of both species and individuals.

April 19 marked the departure of Gambel Sparrows and Audubon Warblers from many city gardens, though passing migrants were noted for another week. An unusual city visitor was a Black-chinned Sparrow which stopped on this date to bathe and sing in a Pasadena garden made very attractive to travelers by the air-lines. On the same date arrived also the Ash-throated and Wright Flycatchers, the Western Tanager and the Lazuli Bunting. Black-chinned Hummingbirds, first noted April 10, were abundant in the canyons on the 19th, while Hermit Thrushes, Thurber Juncos, Lewis' Woodpeckers, Band-tailed Pigeons, and Robins were still here in large numbers. The last two species appear upon our lists the last time (April 23) when the Russet-backed Thrush arrived, overlapping the Hermit by about ten days. April 24 brought the Olive-sided Flycatcher and the Long-tailed Chat. April 26, Willow Goldfinches, Song Sparrows, and Linnets were at the height of their nesting and song season, and Macgillivray's Warblers were common.

April 26, Black Terns were found at Nigger Slough, on the same date as last year. There were also there 26 Long-billed Dowitchers in summer plumage, many Black-necked Stilts, a few Yellow-legs, 4 Cinnamon Teal, Rough-winged and Violet-green Swallows. April 28 brought many Townsend and Hermit Warblers. April 30, Black-headed Grosbeak had young out of the nest, a California Thrasher was feeding young in nest, and Lawrence's Goldfinch and Long-tailed Chats were numerous.

May 2, a trip was made to one of the canyons of the Sierra Madres, where the Violet-green Swallows were found at their accustomed nesting trees, the Olive-sided Flycatcher at its station, and a nest of the Thurber's Junco was found, containing four eggs. Townsend and Hermit were the most abundant Warblers. Warbling and Cassin's Vireos and Flycatchers of many kinds were numerous, California Purple Finches and Canyon Wrens were in song, and Mountain Quail were seen. The day's list totalled forty-four species. This walk has been taken annually for a number of years, and comparative lists kept.

Full streams have again brought Water Ouzels down to the lower parts of the canyons from which they have been absent for several years past, due to the low stage of water.

May 10, the contributor to 'The Season,' from San Francisco, honored the writer with an invitation, through a mutual friend, to go in search of Blue Grosbeaks. Fortune favored us, not only with the desired Grosbeak but also with Lazuli Buntings, Costa Humming-birds, Purple Martins, an Egret, and many more common species of both land- and water-birds. Western Blue Grosbeaks have been recorded in many different localities, ranging from the desert at Thermal to the hills of Whittier and ocean shores near Balboa. May 30, the individual seen on the 10th was again found at the same place, in full song and accompanied by a mate. It was recognized as the same bird by its immature or changing plumage, only the head being blue, with a few traces of blue in the body plumage. Four other full-plumaged males were seen on that date. June 1, a pair was found feeding two young that were perching in blossoming mustard.

May 14, at an altitude of about 6,400 feet, in Upper San Antonio Canyon, Warblers in song were the Piliolated, Yellow, Black-throated Gray, and Audubon's. All except the last were very common but only one pair of Audubon's was seen. Western Tanagers and Black-headed Grosbeaks were numerous, and Olive-sided Flycatchers called from the tops of the tall spruce trees. Large numbers of Pine Siskins and many Cassin Finches were feeding among the alder catkins.

May 16, Miss Helen S. Pratt reports seeing Black Swifts about a cliff and waterfall far back in the San Gabriel range. Vaux Swifts were observed with Swallows over the Arroyo Seco, June 1. Purple Martins are frequently seen about buildings in the center of town and at Echo Park and are undoubtedly increasing.

May 25, at Nigger Slough, Black-necked Stilts were apparently nesting, as one of the birds advanced to meet the observers and threw itself upon the ground in an agony of beseeching. Its feelings were spared, perhaps the more readily as the attention of the party was claimed by a curious ceremony being performed by four other Stilts nearby. After some passages at arms in the air, they alighted, partners facing each other and executed a series of bows and stately steps, after which they flew away in pairs in opposite directions. On this date a Pied-billed Grebe was followed by two young, and many shore-birds were seen, including eight Long-billed Curlew.

May 30, Least and Forster's Terns were numerous at Balboa, and in the inner bay were six Great Blue Herons, one Egret, and five White Pelicans. The Pelicans are currently reported to fly back and forth from tide water to Lake Elsinore daily. Seven notable flights of White Pelicans have been observed from Mt. Wilson and Pasadena this spring, totaling many hundred birds. One large flight of Swans was reported and three flights of Little Brown Cranes.

Other flights of Cranes have been noted in the Colorado desert, where several parties of our observers have gone this year. Lark Buntings were seen in migration about the middle of April, as were also Swainson's Hawks. A Black-and-White Warbler was taken by a local ornithologist. Other birds seen by our members in various localities in the Colorado and Mohave deserts are as follows: Cactus Woodpecker, Cactus Wren nesting, Rock Wren nesting, Sage Sparrow nesting, Black-chinned Sparrow, Black-throated Sparrow, Vermilion Flycatcher, Plumbeous Gnatcatcher, Verdin, Crissal Thrasher, Leconte's Thrasher, Gambel Quail, Scott's Oriole, Phainopeplas were very numerous, feeding on the desert mistletoe.—FRANCES B. SCHNEIDER, *Los Angeles, Calif.*

Book News and Reviews

PHILIPPINE BIRDS FOR BOYS AND GIRLS.

By RICHARD C. MCGREGOR and ELIZABETH J. MARSHALL. With illustrations by MACARIO LIGAYA. 8vo., 138 pages, 6 colored plates, 26 line cuts. Price, \$1.50, ppd. Published by the authors, care of the Bureau of Science, Manila, P.I.

Thirty Philippine birds are described and figured in this little volume which makes an admirable first book of birds for children and grown-ups as well. The text is well adapted to attract and instruct the audience to which it is addressed and the illustrations, particularly the pen and inks, are most pleasing.—F. M. C.

The Ornithological Magazines

THE CONDOR.—Serious students of birds will find much of interest in the general articles of the March number of *The Condor*. Pemberton gives an interesting and well illustrated account of a visit, in May, 1921, to 'A Large Tern Colony in Texas,' between Brownsville and Point Isabel. Here no less than eight species of Terns were found breeding on three islands. In order of abundance the list included the Gull-billed, Common, Least, Caspian, Royal, Black, Cabot's, and Forster's. It is gratifying to learn that the Gull-billed and Least Terns are still abundant in this remote corner of Texas.

In 'Notes on Fox Sparrows in California in the Autumn of 1921,' Joseph Mailliard continues his studies on the migration of these interesting birds along the northern coast of the State. From Requa south to the Mattole River practically only one subspecies was found—the Sooty Fox Sparrow (*Passerella i. fuliginosa*).

In 'A Study of Roosting-Holes of the Red-shafted Flicker,' Stoner gives the results of his examination of an old wooden building in the outskirts of Benicia in which there were seven large and nine smaller holes drilled by Flickers, not for nesting-sites, but mainly to secure shelter on rainy and frosty nights.

'A Law Governing the Elevation of the Nesting-Site' of Passerine birds has been

worked out by C. K. Averill from a study mainly of Warblers, Finches, and Thrushes. He concludes that birds with short, round wings nest low while those with long, pointed wings may nest high or low. Measurements of wing and heights of nests given in the tables seem to bear out his conclusions.

Among the brief notes on page 63 is a record of "a pair of San Diego *Tilmousses* (*Baeolophus inornatus murinus*)" collected near Palmdale, which are "most like *murinus* but are not typical of that form." It is to be hoped that this plural is *not* typical of the form advocated by the author of the note for the names of such birds as the Goose and the Grouse!—T. S. P.

WILSON BULLETIN.—Volume XXXIII for 1921 has been concluded since our last notice a year ago. We are immediately impressed by the increase in size, the improved quality of paper, the attractive illustrations, and, above all, the improved calibre of the articles. The editors state that the file of papers awaiting publication far exceeds the capacity of the Bulletin to handle. This is regrettable from many points of view, but invariably results in raising the standard of the articles. Another new feature is a section entitled 'Notes—Here and There' conducted by the Secretary, Mr. Albert F. Ganier, whose activities the Club has good reason to appreciate.

Turning now to the articles, it is a matter of regret that space prevents more than brief notices of the more important. In the June issue, Frank L. Burns has a further installment of his paper 'Comparative Periods of Nestling Life of Some North American Nidicolæ,' presenting valuable data in a neglected field, which are concluded in the December issue. Of special note is an article in the September number on Nebraskan Tyrannidae by Myron H. Swenk and Ralph W. Dawson. This article, as well as shorter notes by the senior author in other issues, bears the stamp of thorough scientific investigation backed up by judicious col-

lecting, and the status of eastern and western species in the state becomes capable of clearer definition through their researches. In the same issue a paper by J. A. Spurrell, concluding an account of the 'Land Birds of Sac County, Iowa,' suffers by contrast. While undoubtedly of value, it bears the obvious stamp of incompleteness, and the data submitted could be greatly improved by five years' more observation.

A most interesting article in the December issue is on the 'Summer Birds near Lake Caddo, Texas, by Alvin R. Cahn, a region practically unknown ornithologically and still comparatively wild and inaccessible. Mr. Cahn made the most of his opportunity, and records such interesting birds as Attwater's Prairie Chicken, the Wild Turkey, and the Wood Duck, the latter in great abundance. W. L. McAtee contributes a paper summarizing the results of ten spring bird lists made near Washington, D. C. The most important part is the preliminary discussion of methods of procedure, and the rules to be observed in making such a list. These rules are most timely in a day when more and more students are tearing madly over wider and wider stretches of territory in an effort to "run up a big list." There is no doubt that this is good fun, but the results are of small scientific value. A *walking* trip, however, over the *same* carefully selected route, made every year on exactly the same *time schedule* will yield data of real comparative value, especially if a careful count of individuals is taken. It is highly desirable, as McAtee points out, for two or more observers to see and hear every species listed and to remain together the whole time. The importance of such a check cannot be overestimated. We also heartily agree with the writer in the desirability of *seeing* every species. The somewhat lengthy discussion, however, of the risks taken in making sound records is too dogmatically written. Some of the author's examples of birds with confusing notes will seem absurd to many students whose ornithological attainments are way below those of Mr. McAtee, and we cannot help but suspect either the keenness of his ear or, what is much more likely, a lack of sufficient annual field experience with the birds of the region to

maintain his memory at par. There is no doubt that auditory memory is the first to go. No one can hope to distinguish similar Warbler songs, for instance, who does not hear them every available day every spring, and even when once well learned, lack of practice for two successive seasons is quite sufficient to destroy the ability previously acquired. On the other hand, it is equally impossible to make a good Warbler list unless the ear is in proper training to pick up all songs *worth looking up*. In the opinion of the reviewer, another rule might be added to make spring bird lists worth while, and that is that the proposed route should be covered as frequently as possible throughout the spring. Only in this way can the elusive though fairly common resident or summer resident species be obtained, by definitely locating nests or the restricted habitat of a given pair.

An inspection of the ten lists given indorses the suspicions already voiced. In the first place the variety of routes destroys much of potential comparative value. The percentage of 'bad misses' in most of the lists is also far too high. Thus the Nuthatch is on only three lists, and should certainly have appeared on all the last three, if there had been sufficient preliminary field work. The entire absence of the Tennessee Warbler from any of the lists is astonishing. In 1918 the reviewer was out daily in the Washington region. The Tennessee Warbler arrived on May 7 and was common on May 11 and May 12, when it was singing freely. No Warbler, except possibly the Cerulean and the Orange-crowned, is more easily overlooked, unless its *song is known*. In conclusion we might add that the citation of birds whose notes are similar, or cases (exceptional let us hope) where 'naturalists' could not distinguish between the sound made by cow, bird, or bullfrog (!), do not prove the general unreliability of sound records, any more than a list recently published of species which are indistinguishable when seen in life proves the unreliability of sight records.

The Field Notes in all three issues bear a pleasing stamp of reliability. In closing we congratulate the Club on a magazine of increased attractiveness and value.—L. G.

Bird-Lore

A Bi-Monthly Magazine
Devoted to the Study and Protection of Birds
OFFICIAL ORGAN OF THE AUDUBON SOCIETIES
Edited by FRANK M. CHAPMAN
Contributing Editor, MABEL OSGOOD WRIGHT
Published by D. APPLETON & CO.

Vol. XXIV Published August 1, 1922 No. 4

SUBSCRIPTION RATES

Price in the United States, one dollar and fifty cents a year;
outside the United States, one dollar and seventy-five cents,
postage paid.

COPYRIGHTED, 1922, BY FRANK M. CHAPMAN

Bird-Lore's Motto:

A Bird in the Bush Is Worth Two in the Hand

WE HAVE lately compared the self-written histories of the boyhood of John Burroughs* and J. A. Allen† with each other, and with the record of their authors' achievements. These men had much in common in environment and temperament.

Burroughs was born in 1837, Allen in 1838; both died in 1921. Both were born and raised on a farm, Burroughs in the Catskills, Allen near Springfield, Mass. Both had brothers from whom in tastes and mentality they differed widely. Neither could attribute his distinctive characteristics to inheritance. Both were direct, simple, sincere, and unaffected, shunning society but loving companionship. Both had a pronounced interest in nature, but one was born a poet and the other a scientist; and each developed true to type, but Burroughs was much longer in finding himself.

The inherent desire to study nature, which made Allen one of the foremost technical naturalists of his time, was soon manifested, and was too clearly defined and insistent to be denied. Burroughs' longings were more vague. He was primarily responsive to literature and describes how the reading of certain passages from the 'Life of Washington' always overwhelmed him with a wave of emotion. A strange word at once commanded his attention. Birds, mammals, toads, and insects all attracted him. He used to watch and woo the little piping frogs and induce them to sit in his open hand and pipe; and creep on hands and knees to see the partridge

drum. He watched the mud-wasps building their nests and studied the habits of bumblebees. But this sympathetic interest in the various forms of life about him was not accompanied by the deeper, stronger feeling which characterizes the original investigator. The boy Burroughs appears to have made no collections. He knew nothing of specimens or of the science of natural history.

Allen, on the other hand, without ever having met a naturalist or seen a book on nature began at the age of thirteen to form collections of birds, rocks, and plants, and his specimens were measured, weighed, and named. Thus he gave a wholly spontaneous expression to the desire to acquire that definite type of knowledge which can be obtained only by close personal inspection. He collected to gratify a desire for knowledge, not a passion for acquisition. With unswerving steps he followed the star of his destiny. Guided first by his own longings, an amateur taxidermist, a school teacher and an academy professor were links in the chain of fate which brought him straight to the care of Louis Agassiz. With his feet now firmly on the road, his course was ever upward.

Burroughs, less fortunate, heard no such unmistakable call. Leaving the farm at the age of seventeen, for the ensuing ten years he taught in rural district schools. For the succeeding decade he was a clerk in the Treasury at Washington. It was during the latter part of this period that the 'response to literature,' which was perhaps his dominant trait, found an outlet in an essay on 'Expression.' And when, soon after, he decided to make nature his theme, the experiences of his boyhood came to 'fruit and flower' in his mind and 'Wake Robin' was the memorable and imperishable result. Burroughs had now found himself. The farm at Riverby was purchased, and the Bark Study and Slab-sides became laboratories wherein through the alchemy of his mind Burroughs transmitted experience and impression into the living word.

So these two farmer boys, in their very different ways, fulfilled the promise of their youth, one through the sentiment, the other through the science of nature.

*"My Boyhood." Doubleday, Page & Company.

†Autobiographical Notes. Am. Mus. Nat. Hist.

The Audubon Societies

SCHOOL DEPARTMENT

Edited by A. A. ALLEN, Ph.D.

Address all communications relative to the work of this department to the Editor, Cornell University, Ithaca, N. Y.

THE HOME-LIFE OF BIRDS

NEST-BUILDING AND EGG-LAYING

At no time of the year are birds more interesting than during the nesting period. The throngs of migrating birds bring out their hosts of admirers during April and May; the morning and evening choruses of courting birds draw a response from others during May and June; but the nesting birds are the most fascinating to the quiet observer. The hunting for the nests and the watching of the daily life about the birds' homes hold thrills that are never known by those who put away their glasses when the migration is over. In the last number of *BIRD-LORE* we discussed the courtship of birds; this time let us begin with the mated birds and the building of the nest.

In the beginning it might be mentioned that most birds are monogamous, that is, they have the same mates throughout the period of the dependency of the young. With birds the entire cycle from birth to maturity occurs within a comparatively few weeks. The home is built, the eggs are laid, the young are cared for until they become entirely self-supporting, with many birds, all within the period of a month or six weeks. With the human species this cycle of events requires anywhere from twenty-one to forty years depending upon the number of children. It is fair, then to say that birds are monogamous, even though they may change mates from year to year, or even between broods, as is sometimes the case, so long as they do not maintain two mates at the same time. Some birds, particularly those that do not migrate, probably retain the same mates year after year and, even among migratory birds, the same two birds may resort to the same nesting-spot year after year and remate. We have very little definite information upon this subject, however, and it is one of the problems which 'bird-banding' should throw much light upon. In this, as in most aspects of the home-life of birds, there is as much individual difference as there is with the human species, which makes it difficult to generalize upon but most fascinating to observe. Indeed the similarity of their lives and actions and responses to our own is so striking that it has led some nature writers to endow them with an intelligence and power of thought that is not justified by the facts. Some birds are remarkably faithful to one another while others have much greater attachment for the nesting-site than they have for their mates. If one of a pair of Canada Geese is killed or permanently

separated, the other remains single for years and perhaps never remates. On the other hand, with the majority of birds, if one is killed, a new mate is secured within a few hours.

A few birds, like the Pheasants and, probably, most Grouse, are regularly polygamous and others, like the House Wren (and probably other species of Wrens), Red-winged Blackbirds, Great-tailed Grackles, and doubtless other



THE CANADA GOOSE DEFENDING ITS NEST

The Goose (in the foreground) crouches over her eggs while the gander grasps the intruder with his bill and beats him with his wings. (Birds nesting in captivity)

species, frequently so; and individual cases can be expected occasionally with almost any species, should there chance to be a preponderance of females, a condition which rarely happens. Polyandry, the mating of one female with more than one male, may likewise occasionally happen, particularly if a stronger male is able to drive away one that is already mated. It is not regularly the case with any bird unless it be the Cowbird, and of its domestic relations we still know too little to say definitely.

A few birds are communistic: they build a common nest in which all the females lay eggs and then share the duties of incubation and rearing the young. This is particularly true of the Anis of tropical and subtropical America, though many of the African Weaver Birds and the Palm Chats of Santo Domingo are communistic to the extent of building a common roof beneath which each pair builds its nest. There are slight indications among our colonial-nesting Swallows that they may be leaning toward communism.



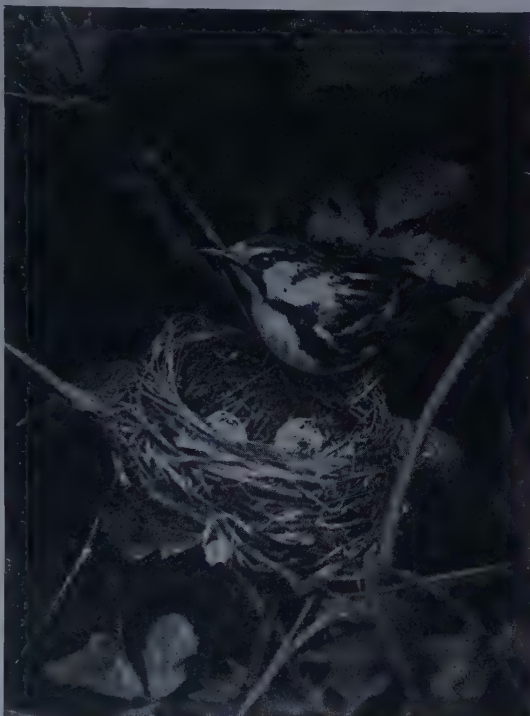
A MALE ROSE-BREASTED GROSBEAK INCUBATING
This is one of the few species in which the bright-colored male assists
in incubation

After the birds are mated the first thought, of the female at least, is the building of the nest. The male has already selected the general nesting area or territory in which he has been singing and which the female has accepted by accepting him. It is her duty, however, to select the actual site where the nest is to be built and to do most if not all, of the building. With most, if not all, species of Wrens the building of 'dummy nests' by the *males* is a common practice but is apparently rather part of a courtship performance, for they are never used by the female. The male House Wren, for example, arriving before the female, proceeds to fill every nesting-box and cranny in the vicinity full of sticks and may even build quite well-shaped nests. When the female

arrives and accepts him for a mate, however, she does not at the same time accept the home which he has built; for even though she may decide to use one of the boxes where he has already started a nest, she usually proceeds to throw out all of the sticks which he has laboriously brought in before starting a nest of her own. I have never known any bird in which the males and females worked equally at nest-building though with many of the common birds the male makes a pretense at helping. It is his duty to see that no other male or even female of the same species intrudes, and this takes so much of his time that, though he may accompany the female back and forth on her trips, he has little time or inclination for gathering nesting material. Judging from the way the female usually treats his occasional offering of nesting material, it would seem that his lack of experience has so warped his judgment that he does not know the proper material when he sees it.

This brings up the question of what determines the proper nesting material for each species. Practically all birds build nests that are characteristic of the species. The materials vary somewhat in different localities depending upon what is most convenient but, in

general, House Wrens use twigs, Bluebirds use grasses, Yellow Warblers use cotton; and so on, though often curious substitutes are employed. I have, for example, a Wren's nest built largely of hair-pins and wire clippings, and a Robin's nest in which the customary grasses were replaced by long, narrow strips of paper from a nearby paper factory. But only such materials are used as permit the bird to build the type of nest characteristic of the species. Baltimore Orioles normally weave their nests from vegetable fibers such as the inner bark of milkweed. They will take pieces of yarn or string or horse-hair just as readily but never, to my knowledge, will they use sticks, straws,



MALE CHESTNUT-SIDED WARBLER ON GUARD

When the male bird is brighter than the female, he usually does not condescend to incubate but either feeds the female on the nest or stands guard awaiting her return from feeding excursions.

This species does either way

or grasses, though grasses are regularly used by the Orchard Oriole. Marsh-birds regularly use the dried sedges or rushes or marsh grasses; field-birds use grasses and horsehair; woodland birds use dead leaves, mosses, and rootlets, and so on. The materials with which a bird comes most in contact are the ones employed in nest-building provided they conform to the general type of nest characteristic of the family.

Birds that spend a great deal of time on the wing and come less into contact with nesting materials and nesting-sites show the greatest diversity both as to site and materials. Among our common Swallows, for example, the Barn and Cliff Swallows build nests of mud about barns or cliffs; the Tree Swallows build nests of straws and feathers in holes in trees or bird-houses; the Bank Swallows build similar nests at the end of holes which they excavate in sand-banks; and the Rough-winged Swallows utilize old Kingfisher burrows or natural crannies about cliffs or bridges or drain-pipes.

The factors that control the selection of the nesting-site are primarily the necessity for concealment, accessibility to the feeding-ground, and protection from the elements. If birds were capable of worrying over the possibility of the destruction of their homes, their heads would be white before their nests were started. As it is, they go about the selection of the site instinctively and finally decide upon one which is usually well concealed from their ordinary enemies such as cats, Crows, Hawks, Owls, Jays, Grackles, Wrens, weasels, skunks, raccoons, squirrels, rats, and snakes, as well as being fairly well protected from wind and rain, and accessible to their feeding-ground. The large percentage of nests that are broken up, however, attests the many dangers that ever beset the bird's home and the bird's life. I think it is no exaggeration to state that less than 10 per cent of the nests which I find each year endure until the young leave of their own accord. I would even venture to say that not one in twenty of the nests that are started succeed in housing the young to maturity.

The many ways in which birds circumvent their enemies by building their nests in inaccessible or inconspicuous places, or by decorating them with bits of paper, cobwebs, or lichens so that they will look like something else, would make quite a story in itself, but we must pass them over and merely mention the birds that have changed their natural nesting-sites to suit changed conditions. Some species are not adaptable and when conditions change they vanish; others are able to make the best of changed conditions and may even increase. Such are the Robin, all of the birds that nest in nesting-boxes, the Phoebe, and the Barn and Cliff Swallows that formerly nested only on cliffs but are now so familiar about our dwellings. The Chimney Swift that has almost forsaken the hollow trees for the chimneys is another good example of adaptation. One often hears of birds nesting in unusual places, such as moving street-cars or traveling cranes, under wagons left standing, in clothespin bags, in the pockets of scarecrows, etc., but they are always of these adaptable

species. It is almost beyond the realm of possibility to have a Yellow-breasted Chat or a Cuckoo or even a Catbird behave in such a manner.

Before leaving the subject of nesting we ought to try to answer the question of why birds build nests anyway. Some we know still lay their eggs on the ground without any nest whatsoever, and they manage to persist or else we would not have any Nighthawks or Whip-poor-wills. The same is true of many of the sea-birds like the Auks and Murres. At the other extreme are the Orioles and the Weaver Birds that weave such elaborate nests. Between



TURNING THE EGGS IS A NECESSARY DUTY ACCOMPANYING INCUBATION

Here is a Florida Gallinule attending to this requirement

the two we find all gradations of nest structure from those that merely scoop out a little depression to keep the eggs from rolling, like the Killdeer, or those that add a few grasses by way of a lining, like the Spotted Sandpiper, to those that build rather elaborate domed nests on the ground like the Meadowlark and the Ovenbird.

Of the birds that have raised their nests above ground to escape floods or terrestrial enemies, there are some that merely lift them by building a platform of dead leaves, like the Veery, or the Rails and Gallinules in the marsh; others build crude platforms of sticks in trees or bushes, barely sufficient to keep the eggs from rolling to the ground. Such are the nests of the Herons, the Mourning

Dove, and the Cuckoos. Crows and Catbirds have advanced a step further, for while they still use sticks they build deeply hollowed nests and line them with softer materials. Nests of the Yellow Warbler, Redstart, and Goldfinch, made entirely of soft materials, doubtless represent a still higher stage in the evolution of nests that culminates in the beautifully woven structures of the Vireos, Orioles, and Weaver Birds. Such is the present status of birds' nests and doubtless it indicates the various steps through which the more complicated nests have passed. If we would understand the real origin of nest-building, however, we must go back to the earliest birds when they first arose from their reptilian ancestors.

Doubtless their habits of egg-laying at that time were about the same as those of reptiles today. Turtles bury their eggs in the sand; lizards hide them in holes in stumps or decaying logs; snakes bury theirs in decaying vegetation; and alligators build nests of the same material in which they hide their eggs, and are the only reptiles which are said to take an interest in the welfare of the young later on. But, as in all other reptiles, the eggs are hatched by the heat of the sun or from the decaying material. Now it must be remembered that reptiles are 'cold-blooded' creatures and are not affected by great changes in their bodily temperature. A turtle basking in the sun may have a blood temperature nearly boiling while the temperature of the same animal hibernating in the mud may be near the freezing point. As its temperature drops, it becomes more sluggish, but its health is not affected. The warm-blooded birds and mammals, on the other hand, can endure but a very slight change from the normal temperature of their blood without ill effect. What is true of the grown bird is equally true of the embryo developing within the egg. Its temperature must be maintained or it will not develop and will soon die. There are a few birds, such as the Megapodes of the Australian region, which still rely upon the ancestral method of burying their eggs in the sand or in piles of decaying vegetation, but they lay their eggs at a time when the temperature is remarkably uniform in the places which they select. All other birds have to depend upon supplying the heat from their own bodies; that is, they have to incubate their eggs. The longest stride in the change from the reptile to the bird and the one which affected their habits even more than the development of wings and feathers, was this advance from a changeable to a constant temperature, from 'cold-blooded' to 'warm-blooded.' We have not the space, nor is it appropriate here, to go into all the differences which this change brought about, but we can point out that the need for incubating the eggs which followed gave rise to the nest-building habit. Birds that had been in the habit of nesting in holes in banks or in trees where they could remain with their eggs with no great inconvenience, were doubtless less affected. They did not have to learn how to build nests, except in so far as they had to learn to dig their own excavations instead of accepting natural cavities. Such is the habit of the Woodpeckers and the Kingfishers today. They excavate

their nesting cavities but they build no nests within for their eggs. Birds that had been in the habit of burying their eggs, however, and now had to lay them on the surface of the ground where they could be incubated, had other problems to meet. There were the floods, the cold, wet ground, the numerous terrestrial enemies, all threatening to destroy the eggs. It is easy to imagine, therefore, that those individuals that learned to raise their nests off of the ground were the ones that persisted until the habit was formed. The first nests were doubtless very crude and the beautiful structures with which we are familiar are no doubt the result of a gradual evolution as already indicated.

We have stated that nests are ordinarily built by the female birds though the male often makes a pretense at helping. The time required depends a good



A PAIR OF COWBIRDS

They have no home-life, but are parasitic upon other birds

deal upon the time at the disposal of the birds, but, with ordinary birds, like Robins or Blackbirds, it is about six days. Three days are spent on the outside and a like time on the interior. The same bird, however, if the first nest is destroyed while the eggs are being laid, might build an entirely new nest in a single day. A pair of Phœbes, on the other hand, under observation this spring, began repairing an old nest fully a month before any eggs were laid. Usually the nest is completed the day before the first egg is laid.

Incubation does not ordinarily begin until egg-laying is completed, so that all of the eggs will hatch at about the same time. Otherwise the first young to hatch would have an unfair advantage over the others in the nest. Occasionally one finds Owls or Bitterns beginning to incubate before all of the eggs have been laid, but they are, perhaps, less regular about egg-laying than most

birds. Most birds lay one egg each day at about the same time but larger birds, like Hawks, Owls, and Geese, have intervals of two days.

As the time for incubation approaches, the bare area on the middle of the breast becomes suffused with blood and is termed the 'brood spot,' and the bird becomes 'broody.' Ducks and Geese which have practically no bare area on the breast then proceed to pull out the down from that region so as to bring the eggs in direct contact with the skin. Incidentally, this down forms a blanket with which the eggs are always covered when the Duck leaves them to feed.

When both birds are colored alike, they usually share equally the duties of incubation, but when the male is brighter than the female, he is not often seen on the nest, the Rose-breasted Grosbeak being an exception. Ordinarily, he either stands guard on the edge of the nest until the female returns from her feeding excursions or else brings food to her. Sometimes he feeds her on the nest but more often he calls, as he approaches, and she flies out to meet him. The easiest way to find a Marsh Hawk's nest is to listen for the returning male and then note from what spot the female flies up to meet him and take the food from his claws. The care of the female by the male is carried to the extreme by the African Hornbills in which species the male walls up the opening to the nest in a hollow tree with mud until only the female's bill can be protruded. He then proceeds to bring her all her food and likewise that for the young later on, for she remains imprisoned until the young are nearly full grown. So great is the task of providing the entire menu for the whole family, we are told, that he becomes excessively thin and often succumbs during inclement weather.

With a few birds the males do most or all of the incubating and care of the young. This is said to be true of the Emeus and Cassowaries of the East Indies, the Rheas and Tinamous of South America, of Ostriches, at least in captivity, and more particularly of our own Phalaropes. In the case of the Phalaropes the males not only do all of the domestic chores but they are likewise less brightly marked than the females, apparently a complete reversal of the sexes.

The period of incubation depends largely on the size of the egg and the nature of the young, larger eggs and those from which precocial young hatch requiring longer periods. The actual time varies from 10 days in the case of the Cowbird to from 50 to 60 with the Ostrich, or even 70 to 80 with the Emeu. Sparrows require 12 to 13; Thrushes, 13 to 14; Hens, 21; Ducks, from 21 to 30, depending largely on the size; Geese, 30 to 35; etc. An apparent exception is the Hummingbird which requires 14 to 15 days but has the smallest egg of all. This may be due to the fact that she receives no help whatsoever from the male and the eggs may become unduly cooled during her feeding excursions, for it is a fact that unusual cooling of the eggs delays the hatching if it does not entirely prevent it.

The extremely short period of the Cowbird is perhaps an adaptation to its parasitic habits, for if the young Cowbird hatches ahead of its foster brothers, it has a better chance of getting most of the food and either starving them to death or ousting them from the nest.

Young birds are assisted in getting out of the shell by what is called the 'egg-tooth,' a hard calcareous tubercle which develops on the upper mandible and which is used as the cutting tool in 'pecking' the egg. The bills of all embryo birds are very soft, making such an instrument necessary. This egg-tooth persists for several days after hatching and is quite conspicuous on some birds. Many birds, particularly Grouse and Quail, cut a neat little cap out of the larger end of the egg with this egg-tooth, but others break the shell irregularly. Most birds are very careful to remove the empty shells from the nests, either swallowing them or carrying them off to some distance. Birds that have precocial young, however, that do not stay in the nest for any time after hatching, do not bother with the empty shells.

During the period of incubation the eggs have to be turned once or twice a day so that they will be heated evenly and so that the membranes will not adhere to the shell and prevent the free passage of air to the interior. Some birds turn the eggs with their feet and others with their bills, and usually it is at the time that the female returns from a feeding excursion. The accompanying photograph of a Florida Gallinule shows the female bird turning the eggs with her bill.

(To be continued)

SUGGESTIONS

1. What is meant by monogamy among birds and what birds are monogamous?
2. Have you any definite information upon the mating of the same two birds two years in succession?
3. Have you ever known birds to change mates between broods?
4. What is meant by polygamy among birds and what birds are polygamous?
5. Have you ever known House Wrens to be polygamous? Any other species not regularly so?
6. What is meant by communism among birds and what birds are communistic?
7. Which sex selects the nesting-site and which sex builds the nest?
8. What is the duty of the male before and during nest-building?
9. Have you ever observed a male bird assisting in the building of the nest? To what extent?
10. What determines the nesting material used by birds? The general type of nest?
11. Have you known of any birds using unusual nesting materials or nesting in unusual places?
12. What determines the selection of the nesting-site?
13. What is the probable origin of the nest-building habit in birds?
14. Outline the probable evolution of the more elaborate nests that we know today and illustrate the steps by examples of present day nests that represent the different stages.
15. Why do some birds that lay their eggs in holes build nests and others not?

16. Why do birds incubate their eggs? When does incubation begin? How long does it last with different birds?
17. What is meant by 'warm-blooded' and 'cold-blooded' and what changes must have taken place in the birds' habits when the change from one condition to the other evolved?
18. How long does it take a bird to build its nest? Have you any original observation upon this?
19. What is meant by the 'brood-spot' and what is its function?
20. What is the 'egg tooth' and what is its function?

FROM YOUNG OBSERVERS

AN EAGLE'S NEST

I am at some lakes and my Daddy and I were paddling in a canoe when we heard a noise from a bird which afterwards I found was an Eagle, and it flew to a big nest which an Indian said was about twenty-five years old. We saw the Eagle in another place, too. Once when I was wandering through the woods I saw a Red-headed Woodpecker pecking on a drooping dead branch, and he pecked and pecked till the limb broke. The Woodpecker was on the under side and it fell and fell till within about 4 feet from the ground, when he fluttered and got away. He had cut off the limb he was sitting on.—GRISCOM MORGAN (age, 9 years), *Englewood, Ohio*.

A TENANT FOR OUR BOAT

One sunny day in April I was lying on the grass reading when suddenly I heard a sweet twittering song. Looking up I saw a small bird. It had a brown back and tail. Its breast was a sort of gray and brown mixed. It was about the size of a female Sparrow and it twisted its tail in a comical fashion, singing a short song over and over again. For about a week I saw it either in an apple tree or an old brush-heap, always near a large skiff which we had taken out of the river and turned over before the ice formed last fall. In about two more days another bird came which was about the same size and color as the first. I began looking around but could not find the nest which I knew was somewhere near. The next day as I was going past the skiff I tapped it with a stick which I had in my hand. Almost instantly a small form glided noiselessly out from under the boat. I peeped under and there, on the front seat was the nest. It was of rough structure on the outside but the center, which was about the size of a hen's egg, was lined with feathers as soft as down. This little House Wren is a very busy worker, eating bugs and insects that destroy crops. It also makes everybody cheerful by its singing.—FORREST LEESON (age, 14 years), *Belpre, Ohio*.

INVITATION

A BIRD PAGEANT FOR THE DEDICATION OF A BIRD BATH

Compiled for the Audubon Society of
Robert E. Lee (No. 30) School

From those poets who love birds, especially Percy Mackaye.

JANUARY 18, 1922. SAN ANTONIO, TEXAS

CAST OF CHARACTERS IN ORDER OF APPEARANCE

ORNIS: A Fairy LOIS CUNNINGHAM

Annual Visitants to San Antonio

CARDINAL	Helen McDavitt
DOVE	Earle Harle
KILLDEER	Marie Frazor
SUMMER TANAGER	Paul Walton
ORCHARD ORIOLE	Enos Reynolds
CEDAR WAXWING	John Herren
BLUEBIRD	Edna Taylor
TUFTED TITMOUSE	Edna Grote
SCARLET TANAGER	Callie Dixon
QUAIL	James Butcher
YELLOW WARBLER	Thelma Krause
SCISSOR-TAILED FLYCATCHER	John Kight
KINGFISHER	Marguerite Uhr
GREAT-TAILED GRACKLE	Nat. Adler
MEADOWLARK	Clinton Herring
RED-HEADED WOODPECKER	Hugh Magill
FIELD SPARROW	Jerry Oates
BLUE JAY	Celso Cuellar
VERMILION FLYCATCHER	Inez Ankerson
INDIGO BUNTING	Charles Pabst
RUBY-THROATED HUMMINGBIRD	Sidney Stewart
WREN	Irma Mesch
ROBIN	Nellie Jordan
MOCKING BIRD	Robert Loessberg

Ornis comes forth from the retreat, bearing a pitcher of water. She mounts a little platform made of tree branches by the covered bird-bath. She speaks to the children who are seated in a circle nearby the bath:

Come gather round this covered spot,
Ye children of this city school.
Be silent! Let the laughter of your play
Be still! Hearken with quick ears,
And you shall hear of treasure
To which you all are heir.

You have been robbed, O city children;
You have not known your feathered friends.

The hostile city drives them forth.
 No longer here they nest and fly;
 Deep in the woods they've fled to sing.

They are God's choicest singers.
 They welcome every rising sun,
 While you, perhaps, are still abed
 With sleepy head.
 They pour their soul abroad
 In cheerful ecstasy.
 They fly with all the winds
 And visit many lands
 Which you, perhaps, will never know.

They know the secret streams among the hills.
 They probe the bosoms of the trees;
 And with exploring wing
 They search through every thicket.
 The wild flowers bend beneath their speckled breast,
 And Autumn's ripened seeds are carried far and wide
 For Spring to dress in glowing color.
 They wage a daily battle with the worms
 That would destroy your growing food.
 They stitch a tiny house with magic art,
 And soon bright-colored eggs
 Are hatching 'neath the mother's breast.

The birds are wingèd joys;
 But you must gentle be,
 If you would win their friendship.
 If you do follow them with love and care
 They'll lead you to much health and happiness;
 They will charm you all your life;
 They will teach you truest knowledge.

If you will only follow
 Over wooded hill and hollow,
 Only watch and silent be
 By the stream and 'cross the lea,
 They will sing their sweetest song,
 Make you glad the whole day long,
 Make you wise in woodland lore,
 Make you rich in Nature's store.

If you promise to be gentle,
 I will draw this covering mantle.
 Here the birds may rest awhile
 In their travels many a mile,
 Bathe and drink from this tiny pool,
 Here in sight of you in school,
 And perhaps you'll wish for wings,
 While the robin dips and sings.

Now I'll call to the birds of the air,
They may e'en now be lingering near.

Come here, come here, comrades coy,
From hill and swamp and heather;
Make joy, make joy together!
Slant wing and sleek feather,
Tawny beak and scarlet vest,
Bulging bill and cocking crest,
Hither!

Tumble out of nest,
Topple out of windy weather
Here, hola!
Up from dew-grass, down from aerie,
With preenings quaint,
Purple dyes and crimson paint,
Here, hola in merry state!

Ornis, Ornis,
Summons you to dedicate
Here a new bird-bath!

The birds come running in zigzag paths, with stops and starts all converging round the bath, and with a continual chorus of bird-calls:

Cardinal	<i>Good-cheer!</i>	Scissor-tail	<i>Ka-quee!</i>
Dove	<i>Cool Cool</i>	Kingfisher	A crackle
Killdeer	<i>Killdee!</i>	Meadowlark	Whistling boy
Field Sparrow	<i>Cher-wee, dee-e-e</i>	Red-headed Woodpecker	<i>If! if!</i>
Summer Tanager	<i>Chipl! Chipl!</i>	Grackle	Throaty noise
Orchard Oriole	<i>Hü-e-e-</i>	Blue Jay	<i>Jay! jay!</i>
Cedar Waxwing	A whistle	Vermilion Flycatcher	Long whistle
Bluebird	Soft whistle	Indigo Bunting	Short whistle
Tufted Titmouse	<i>Petel petel</i>	Hummingbird	Noise with wings
Scarlet Tanager	<i>Chipl! chipl!</i>	Wren	<i>Whee-udel!</i>
Quail	<i>Bob-white</i>	Robin	<i>Cheerily, cheerup</i>
Yellow Warbler	<i>Witch-e-wee-o</i>	Mocking Bird	A whistling boy

While Ornis pours water from her pitcher into the bath, the Birds dance and sing, now and then sprinkling water on each other with their fingers:

Veery, veery! vireo!
Cedar waxwing! warbler wary!
Ori-ori-oriole!
Here is sanctuary!
Jack daw rath,
Scissor-tail-twitcher
Drink's in the pitcher
Dip in the bath
Dew's in the bath.
Rain's in the pitcher
Dawn's the greenwood eerie;

Here, O, highhole!
 Redpoll!
 Oriole
 Vireo, vireo, vireo!

ORNIS: Welcome O Birds
 Hither thou comest.
 The busy wind all night
 Blew through thy lodgings, where thy own warm wings
 Thy pillows were. Many a sullen storm
 Rained on thy beds
 And harmless heads;
 But now as fresh and cheerful as the light,
 Thy little hearts in songs doth sing
 Unto that Providence whose unseen arm
 Hath clothed thee well and warm.

The Birds dance a sprightly dance around the bath at the end of which Ornis steps down and speaks to some of the Birds in turn, placing her wand on their shoulders or touching their heads or hands. Now and then a bird replies.*

The birds crowd around Ornis and begin to move-off in a dance with her toward their retreat singing:

Untamed, unshamed,
 On swift shy wings;
 Whom do we follow?
 Jubilant Joy!
 We dream,
 We drink from immortal springs,
 Hid away in a far-away hollow.
 Follow, follow,
 O girl and boy!
 By tree and stream,
 On land and sea,
 The heart that ever sings.

The birds disappear in their retreat with the vanishing birdcalls sounding as at first.

Led by Ornis, all the birds now come back and sit down in a semi-circle facing the audience. Ornis stands before the Principal of the school and says the following, to present the deed of gift, with all the signatures of the members of the Audubon Society engraved upon it:

ORNIS: Mrs. Schenck, the 1921 Audubon Society of Robert E. Lee (No. 30) School have had so much pleasure in bird-study that, before we finally depart from the portals of this school, we wish to leave behind some token of our gratitude. So we beg you to accept this bird-bath from us. And we herewith present to you an engrossed deed of gift of same, signed with our respective signatures.

COPY OF THE DEED

To the Robert E. Lee (No. 30) School, Mrs. K. S. Schenck, Principal.

We, the Audubon Society of 1921, make gift of a bird-bath, this day in token of our gratitude for happy school days and in remembrance of our delightful study of birds.

Jan. 18, 1922. San Antonio, Tex.

LOIS CUNNINGHAM,

Signed by all the pupils

President

*Owing to limitations of space, the clever dialogue between Ornis and the various birds has been omitted. It can be secured by interested readers from the Editor of the School Department.

The Audubon Societies

EXECUTIVE DEPARTMENT

Edited by T. GILBERT PEARSON, President

Address all correspondence, and send all remittances, for dues and contributions, to the National Association of Audubon Societies, 1974 Broadway, New York City. Telephone, Columbus 7327

T. GILBERT PEARSON, *President*
THEODORE S. PALMER, *First Vice-President* WILLIAM P. WHARTON, *Secretary*
FREDERIC A. LUCAS, *Second Vice-President* JONATHAN DWIGHT, *Treasurer*
SAMUEL T. CARTER, JR., *Attorney*

Any person, club, school or company in sympathy with the objects of this Association may become a member of it, and all are welcome.

Classes of Membership in the National Association of Audubon Societies for the Protection of Wild Birds and Animals:

\$5 annually pays for a Sustaining Membership
\$100 paid at one time constitutes a Life Membership
\$1,000 constitutes a person a Patron
\$5,000 constitutes a person a Founder
\$25,000 constitutes a person a Benefactor

FORM OF BEQUEST:—I do hereby give and bequeath to the National Association of Audubon Societies for the Protection of Wild Birds and Animals (Incorporated), of the City of New York.

INTERNATIONAL BIRD PROTECTION

An International Committee for the Protection of Wild Birds has recently been formed. Such action was taken at a meeting of bird protectors held at 36 Smith Square, London, on June 20, 1922. The following were present and took part in the proceedings: P. G. van Tienhoven, of Amsterdam, Holland; Dr. A. Burdet, of Overveen, Holland; M. Jean Delacour, of Paris, France; T. Gilbert Pearson, of New York City, and the following who are prominently connected with various bird-protective organizations in England: The Earl of Buxton, G. C. N. G.; Viscount Grey, of Falladon; William L. Sclater, H. J. Massingham, Frank E. Lemon, Mrs. Reginald McKenna, and Dr. Percy Lowe.

Those present formed themselves into a temporary committee to serve until such time as their respective societies shall have opportunity officially to appoint representatives on the committee.

Various matters in connection with wild-bird protection, of mutual interest to the various countries involved, will at once be taken up. Plans were also made for closer coöperation between the various societies in the matter of exchange of information, printed and otherwise, so that all may keep in close touch with what is being done elsewhere in the world. Bird-protective societies in countries not represented will be invited to unite with the movement and appoint representatives.

IMPRESSIONS OF A BIRD-LOVER IN FRANCE

As the steamship 'Savoie' approached the French coast on May 13, a flock of Kittiwake Gulls appeared and convoyed us until the night approached. Next day the Black-backed Gulls came, and in the afternoon Herring Gulls took up their station in our wake and beat their way shoreward until the anchor rumbled down in the mouth of the

Seine, as the setting sun lighted up the cliffs of Havre.

The first land-bird seen in France was a Goldfinch, quite differently attired from our American bird that bears this name. Jackdaws I have seen feeding in the public gardens of Paris and standing on the shell-shattered arches of many a war-ruined church of

northern France. A breeding pair of Kestrels were crying about the injured towers or perching on the necks of the broken gargoyles of the Cathedral of Rheims.

'English' Sparrows are to be seen, although nowhere as abundant as in New York or Chicago. A pair have their nest in the crown of an angel standing over the portal of the Temple of Justice in Paris. Others were seen feeding their young in the shell-splintered trees girting the *Chemin des Dames* eastward from Soissons. In all the cities and villages large black Swifts circle and dart under the eaves and above the roofs of the everpresent stone buildings. Their high, squeaking notes may be heard at all times of the day. They appear not to build their nests in chimneys but in holes and cracks of the houses. White-rumped House Martins make their cradles of mud on protected beams of church towers and about the homes of peasants.

In the fields, half a mile from the village of Chamery, is a little shrine to which many loyal Americans find their way. It is here that I first met the Skylark. It arose singing from the meadow and by a series of short,

fluttering flights ascended in an irregular spiral to a height of perhaps three hundred feet. Then, with wings and tail spread to the utmost and soaring uncertainly, like an injured aeroplane, it slowly sank for a time until suddenly, with half-closed wings, it volplaned to the earth but a few yards from the grave of the fallen Quinten Roosevelt. The whole performance required a little more than two minutes and not for one instant did the notes of the happy bird cease to pour forth in the still morning air.

On the evening of May 16, in Paris, I had the great pleasure of addressing a meeting of the French League for the Protection of Birds. This organization in France corresponds to the National Association of Audubon Societies in the United States. It was organized January 26, 1912. The present membership is about 600 and the annual fee for members is 10 francs. Since the beginning the League has published a magazine, *Bulletin de la Ligue Pour la Protection des Oiseaux*. It holds meetings for the members and offers cash rewards to officers of the Re-



CHATEAU OF CLERES, IN NORMANDY

Home of M. Jean Delacour, President of the French League for the Protection of Birds
Photographed by T. Gilbert Pearson

public who bring about convictions of persons who illegally kill wild birds.

It also presents medals now and then for distinguished achievements along the lines of bird-protection. Of late it has taken up the subject of encouraging the establishment of private bird sanctuaries, and issues metal signs for posting. Five hundred acres of the devastated Mormal Forest have been granted by the Government to the League as a sanctuary. Should the experiment prove successful other grants will follow.

France has neither National nor Provincial game-warden forces, such as we know in North America. The civil officers alone are responsible for enforcing wild-life protective measures, and, as may be expected, they show scant interest in this aspect of their duties. A hunting license is required. Few of the country people ever hunt or even possess guns. Furthermore, most of the game is found on private estates. Skylarks are legal game-birds. They are killed and sold in enormous numbers in all the cities of the land. Other small birds are trapped illegally and eaten, especially by the inhabitants of southern France.

"Tis apple blossom time in Normandy," and I am writing these lines in the beautiful Chateau of Cleres (Clair), the home of M. Jean Delacour, President of the French League for the Protection of Birds. The

500-acre estate is a magnificent sanctuary of wild life. In addition to the native birds, M. Delacour, who is a great traveler, has brought here 200 and more species of exotic forms ranging from Hummingbirds to Rheas. Many of these now inhabit the surrounding country; especially is this true of the Senegal Palm Doves, Barbary Doves, Australian Crested Pigeons, Ring-necked Parrakeets, Macaws, and various Pheasants. Interesting mammals have the run of the place also, and one may see antelopes, kangaroos, caviés from Patagonia, and various deer. Here my gracious host has introduced me to many of his native feathered friends, such as the Pied Wagtail, the yellow-billed singing Blackbird, the Missel-thrush, the Rook, and the Cuckoo.

The chateau is one of the most historic in France. It dates from the eleventh century and as it is today so it has stood since the last additions were made in the sixteenth century. Beneath its roof kings of France have been entertained and many times its walls have been bitten by the arrows of the English long-bowmen.

It is peaceful and very beautiful at the Chateau of Cleres. Just now the chimes from the ancient village church are ringing and they are very sweet—these 'Chimes of Normandy.'—T. GILBERT PEARSON, *Cleres, France*, May 25, 1922.

A BIRD SANCTUARY IN THE BAHAMAS

In 1904 Dr. Frank M. Chapman discovered a very large colony of Flamingos breeding on the Island of Andros in the Bahamas. He also found that the birds were being killed and eaten by the natives. At his instance steps were taken which resulted in government restrictions against the killing of the birds. No adequate means were provided, however, for enforcing the law and the slaughter of the Flamingos has continued until the present time, when late reports indicate that only a pitiful remnant of the vast numbers found by Chapman still remains.

When this information became generally known, it caused a stir among those inter-

ested in the protection of birds, with the result that an order by the Acting Colonial Secretary of the Bahama Islands has just been issued creating a bird sanctuary of the southern part of Andros. The wording of this interesting document follows:

BAHAMA ISLANDS

H. E. S. CORDEAUX, *Governor*.

By His Excellency Major Sir Harry Edward Spiller Cordeaux, Knight Commander of the Most Distinguished Order of Saint Michael and Saint George, Companion of the Most Honourable Order of the Bath, Governor and Commander-in-Chief in and over the said Islands, Vice-Admiral and Ordinary of the same.

A PROCLAMATION.

WHEREAS, Under and by virtue of Section IV of The Wild Birds Protection Act, 1905, it is lawful for the Governor in Council to establish Reserves for the protection of any wild bird, and from time to time to vary, enlarge, or reduce the extent of such Reserves;

AND WHEREAS, It has been deemed expedient by the Governor in Council that all that portion of Andros South of the Southern Bight should be a Reserve for the protection of Flamingos;

NOW THEREFORE, I do hereby proclaim and give notice that all that portion of Andros

South of the Southern Bight shall be a Reserve for the protection of Flamingos as from the fifth day of April, 1922.

Given under my hand and the Great Seal of the said Islands at Government House, in the City of Nassau, in the Island of New Providence this 15th day of May, A. D., 1922, and in the Twelfth year of His Majesty's Reign.

By His Excellency's command,

(Sgd.) P. W. D. ARMBRISTER,
Acting Colonial Secretary.

GOD SAVE THE KING

M. P. 412-22.

RESULTS OF JUNIOR CLUB ORGANIZATION

When the fiscal year of the Junior Department of the Association closed on June 1, 1922, it was found that considerably more than 200,000 children had been enrolled in the bird-work the past year. It is a pleasure to announce that through the generosity of the anonymous donor who has made it possible to build up this great system of primary educational work in bird-study, the efforts will be continued another year. As usual, a different set of birds will be studied. The coming year special attention will be given to the following: Flicker, Blue Jay, Bluebird, Song Sparrow, Robin, and Catbird. Leaflets and colored pictures on these subjects will be supplied to all Junior members.

The widespread interest in this important phase of wild-life protection is manifested by the territory covered in the organization of Clubs throughout the United States and Canada. A fuller account of the accomplishments in the Junior work the past year will be published later in the annual report of the Association.

The following statement shows the distribution of Junior Clubs and Junior members enrolled up to June 1, 1922:

State	Clubs	Members
Alabama	12	559
Arizona	4	219
Arkansas	18	738
California	142	5,862
Colorado	51	2,301
Connecticut	184	6,977
Delaware	38	1,552
Dist. Columbia	2	50
Florida	176	5,963

State	Clubs	Members
Georgia	18	856
Idaho	10	412
Illinois	320	13,457
Indiana	181	6,700
Iowa	123	4,106
Kansas	44	1,543
Kentucky	25	1,023
Louisiana	7	219
Maine	42	1,471
Maryland	58	2,482
Massachusetts	497	18,231
Michigan	146	5,840
Minnesota	202	8,183
Mississippi	5	164
Missouri	110	4,081
Montana	27	1,115
Nebraska	79	2,897
Nevada	8	313
New Hampshire	40	1,404
New Jersey	243	10,689
New Mexico	4	182
New York	843	33,664
North Carolina	11	339
North Dakota	37	1,288
Ohio	616	22,562
Oklahoma	9	377
Oregon	32	3,635
Pennsylvania	607	25,086
Rhode Island	12	652
South Carolina	16	508
South Dakota	36	1,184
Tennessee	9	518
Texas	42	1,604
Utah	26	992
Vermont	25	1,052
Virginia	41	1,838
Washington	114	5,392
West Virginia	33	1,384
Wisconsin	159	6,139
Wyoming	8	274
Canada	358	11,571
British Guiana	1	26
Japan	0	20
Totals	5,851	229,787

NEW LIFE MEMBERS

Enrolled from March 1, 1922, to July 1, 1922

Ames, Mrs. James B.
Bok, Mrs. Edward
Book, Dr. R. D.
Briggs, Mrs. L. Vernon
Calkins, Mrs. Alice H.
Case, Miss Marion R.
Cory, Daniel W.
Dodge, Mrs. M. Hartley
duPont, Mrs. Pierre S.
Fay, F. L.
Frankel, Nathan
Godwin, Mrs. Harold
Harkness, Edward S.
Hittinger, Jacob
Holden, Mrs. Virginia Hawley
Jones, Arthur B.
Locke, Almon A.
Mali, Pierre

Marburg, Miss Emma
Matthies, Miss Katharine
Mayer, Edward L.
Metcalf, Mrs. L. S.
Morss, Noell
Porter, Miss Frances R.
Richardson, C. Tiffany
Sands, Mrs. Benjamin A.
Sargent, Miss Laura
Seaverns, Chas. F. T.
Tucker, Mrs. Carl
Van Law, Jesse Mead
Warner, Mrs. H. A.
Weil, Milton
Whitney, Mrs. Eli
Whittemore, Mrs. Harris
Williams, E. Francis
Yuille, Thos. B.

NEW SUSTAINING MEMBERS

Enrolled from March 1, 1922, to July 1, 1922

Abercrombie, Mr. & Mrs. G. H.
Allen, Miss Amy
Allen, Charles Dexter
Anderson Bird Club
Anderson, Miss Katharine M.
Armstrong, Miss Mary J.
Ash, Miss Annie E.
Ashbridge, The Misses
Ball, M. J.
Ballard, Mrs. May B.
Baltzell, Dr. & Mrs. Wm. Hewson
Bateson, John A.
Bedell, Miss Dorothy M.
Behr, Miss Minna D.
Behrend, Dr. Moses
Beitler, Abraham M.
Bell, Gilbert E.
Blair, Mrs. A. A.
Blauvelt, Miss Bertha
Blow, Mrs. Geo. P.
Blunt, Mrs. H. W., Jr.
Boies, Mrs. William J.
Borden, E. Shirley
Borden, Mrs. Jas. B.
Bracken, Mrs. Francis B.
Bratt, J. H.
Brinckerhoff, Mrs. M. W.
Brinton, Mrs. Willard C.
Broone, Miss C. Cushman
Brownell, Miss Eleanor O.
Brylawski, A.
Burck, Miss Florence H.
Burr, Mrs. H. L.
Canedy, Mrs. C. F.
Capen, Geo. H.
Cardeza, Mrs. J. M.
Cassard, Harrison
Chace, Miss Maud

Chiniguy, William F.
Clegg, Mrs. Luther B.
Clowry, Robert C.
Cole, John N.
Coleman, Miss Catherine A.
Coleman, Master George Edward, Jr.
Collins, Mrs. Wm. H.
Cook, C. Lee
Corwin, Mrs. A. S.
Cotton, Mrs. Joseph P.
Creighton, Mrs. Thos. S.
Dady, Charles
Davis, Master Sam
Doak, Mrs. Charles
Dobson, Miss Lulu
Downer, Mrs. Jay
Dunk, Miss Laura V. M.
Dutro, Nicholas E.
English, Harry A.
Evans, Miss Clara F.
Field, Mrs. Clifton L.
Fish, Dr. E. L.
Flory, Miss Mary B.
Ford, Miss Clara A.
Forsyth, King
Foster, Dr. G. S.
Fox, Dr. Joseph M.
Fox, Willard A.
Frankel, Mrs. Henry
Freudenberger, Mrs. W. K.
Gamwell, Wm. A.
Ganzalez, Mrs. J. C.
Gaus, Miss Elizabeth E.
Gingrich, Mrs. Cyrus
Girl Scouts, Oak Troop No. 1 (Minn.)
Gittings, James C.
Gowen, Francis F.
Grand, Brooks

NEW SUSTAINING MEMBERS, continued

- Grzybowski, Karl
 Harding, Miss Annie Bigelow
 Heggland, C. M.
 Heiser, J. M., Jr.
 Hepworth, Miss Florence L.
 Hepworth, Mrs. John W.
 Hill, Miss Sarah
 Hocking, Dr. George H.
 Hollis, Dr. Robert
 Hood, Capt. J. D.
 Hollingsworth, Miss Delphine
 Hoskins, Mrs. Robert
 Hurst, William B., Jr.
 Hutchens, Miss Alice J.
 Hyndman, Miss Lillian
 Ikeler, Mrs. P. M.
 Irving, Mrs. L. DuPont
 Jaques, F. L.
 Johnson, Mrs. Guy B.
 Kyler, Mrs. J. F.
 Lasell, Mrs. Joseph, 2d.
 Lawton, Master James
 Levering, Mrs. Harriet
 Lloyd, Mrs. C. Howard
 Lumb, J. F.
 MacArthur, W. W.
 Mackenzie, Joseph W.
 Mahuken, J. Herman (In Memoriam)
 Maier, G. W. M.
 Malm, Miss Dagmar
 Martin, Henry Lewis, Jr.
 Mathews, Gilbert
 Mathieson, Olaf
 Miller, Mrs. Alice A.
 Morgan, E. C.
 Morgenstern, Mrs. S. E.
 Morgenthau, Henry, Jr.
 Morrison, Mrs. James
 Myerson, Joseph G.
 National Gleaner Forum (Mich.)
 Newark Bird Club
 Oliver, Mrs. Thomas Harrison
 Otten, Mrs. Charles
 Paine, Mrs. Clinton Paxton
 Palmer, Miss Jessie B.
 Pearre, Sifford
 Peterson, Miss Margaret Linn
 Polk, Mrs. Wm. M.
 Porter, Mrs. Chas. S.
 Potter, Miss Alice Elizabeth
 Preston, Miss Mabel P.
 Ranstead, Miss Kate A.
 Richards, Miss A. A.
 Roberts, Miss Caroline
 Roberts, Charles L.
 Rogers, Mrs. H. J.
 Root, Willis R.
 St. Paul Audubon Society (Minn.)
 Schulte, I. J.
 Scovell, C. H.
 Sears, Miss Mildred G.
 Sequin, Mrs. Elsie M.
 Shepard, Mrs. Finley J.
 Simonson, Joseph C.
 Singer, Mrs. John Vincent
 Sioux Falls Audubon Society
 Smith, Miss Amedee M.
 Smith, Mrs. F. C., Jr.
 Smith, Miss M. E.
 Starrett, Mrs. Paul
 Stover, Mrs. Olive Payne
 Sullivan, Miss Frances
 Symington, Fife
 Taft, Mrs. H. J.
 Taylor, Benjamin Irving
 Taylor, Miss Katharine F.
 Thomas Miss Maura G.
 Thorndike, Sturgis H.
 Thorpe, Mrs. W. H.
 Tinker, Miss Charity M.
 Tobey, A. F.
 Towns, Mrs. Hiram
 Tracy, Mrs. Amasa S.
 Tyson, Mrs. Frederic
 Van Duzer, H. B.
 Wahmeda Tribe of the Woodcraft
 League of America
 Walker, Gustavus A.
 Warner, Miss C. A.
 Watts, Mrs. Lillian Y.
 Weeks, Miss Leila M.
 Whitney, L. A.
 Whittingham, Mrs. G. H.
 Wiese, Mrs. Wm.
 Williams, J. Edgar
 Wilton Bird Club
 Winward, Miss Alice
 Wunderlich, Herman.



- | | |
|--------------------------------|--|
| 1. REDDISH EGRET—Blue Phase. | 4. LITTLE BLUE HERON—Changing plumage. |
| 2. REDDISH EGRET—White Phase. | 5. LITTLE BLUE HERON—Adult. |
| 3. LITTLE BLUE HERON—Immature. | 6. SNOWY EGRET. |